DELTA DESIGN
INC.

INSTRUCTION MANUAL

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INSTRUCTION MANUAL
Model 2850

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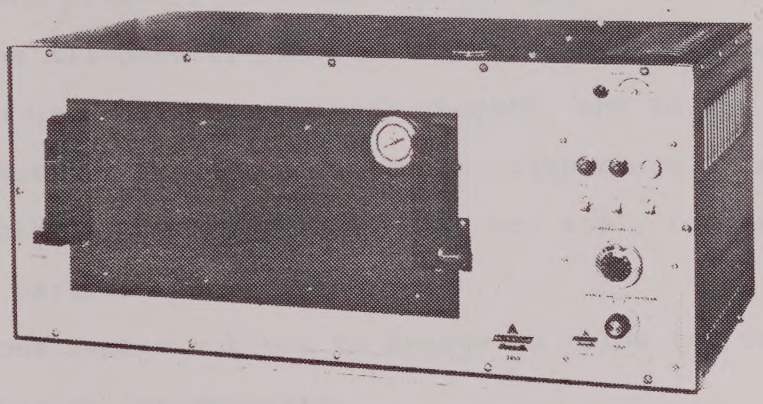

DELTA DESIGN INC.

CONTROLLED DOCUMENT

ENVIRONMENTAL TEST CHAMBER

ENVIRONMENTAL CONTROL EQUIPMENT FOR RESEARCH AND INDUSTRY
5775 KEARNY VILLA ROAD • SAN DIEGO, CALIFORNIA 92123

2850-0974

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San Diego, CA 92123

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SPECIFICATIONS

TEST AREA DIMENSION (H x W x D)	7" x 16" x 7" (17.78 x 40.64 x 17.78 Cm)
AIR CIRCULATION	140 CFM centrifugal blower with baffling provides equal distribution througout the chamber in a horizontal air flow pattern.
INNER LINER	Type 302 Stainless Steel
OUTER CASE	Aluminum
INSULATION	Fiberglas
WEIGHT	52 lbs (23.6 Kg)
POWER REQUIREMENT	120 VAC, 50 or 60 Hz, Single Phase, 20 Amp or 240 VAC, 50 or 60 Hz, Single Phase, 15 Amp.
CONTROLS	POWER On-Off Switch and Light COOL On-Off Switch and Light HEAT On-Off Switch and Light TEMPERATURE SET Control MANUAL/PROGRAM Control Switch (MODE)
HEATING ELEMENTS	Two 20 ohm Elements to give a total of 1875 Watts, Nichrome Wire.
COOLING	Liquid Carbon Dioxide (LCO_2) or Liquid Nitrogen (LN_2)
PROGRAMMING	Programmable
COOL DOWN TIME	Ambient to -53°C in 3½ minutes.
HEAT UP TIME	Ambient to +217°C in 9-3/4 minutes.

TEMPERATURE RANGE	-73°C to +315°C
RESETTABILITY	0.25°C
TEMPERATURE DEVIATION	0.1°C
LINE VOLTAGE STABILIZATION	0.25°C for 105 to 125 VAC, Line Voltage Change 0.25°C for 220 to 240 VAC, Line Voltage Change
AMBIENT TEMPERATURE COMPENSATION	±0.010°C/°C
HEAT LOAD COMPENSATION	±0.040°C Watt
THERMAL IMPEDANCE OF CHAMBER	Approximately 1°C/Watt
NULL DETECTOR CONTACT CLOSURE	Temperature will be within ±2°C of final temperature at 3 minutes after closure occurs.
NULL DETECTOR CONTACT RATING	1 amp, 240V, with contact protection provided by user to protect against inductive loads.

NOTE: IT IS RECOMMENDED THAT THIS MANUAL BE READ HTOROUGHLY BEFORE CONNECTING EQUIPMENT TO ELECTRICAL POWER SOURCE.

INTRODUCTION

The Model 2850 Environmental Test Chamber offers an internal working volume 7" high, 16" wide and 7" deep. Air flow is horizontal at 140 CFM with baffling to provide equal air distribution.

Temperature control of $\pm 0.1^{\circ}C$ provides the precision necessary for bread-board circuit testing.

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1 CHAMBER & CONTROLLER DESCRIPTION

1.1 Chamber

1.1.1 The Model 2850 is a precision environmental temperature test chamber having a stainless steel interior, aluminum outer case and fiberglas insulation. The air circulation is closed and provided by a 140 CFM blower. The chamber is heated by applying full wave power to bobbin wound nichrome heating elements via the heat switch.

1.1.2 The chamber is cooled by injecting liquid CO_2 (liquid nitrogen in the LN_2 models) into the air stream through an expansion nozzle. The coolant flow is metered by a solenoid valve, controlled by a solid state switch.

The temperature control system is shown in block diagram form in Figure 5.

1.2. Solid State Controller

1.2 1 The controller compares the resistance of the temperature probe to the resistance of the TEMPERATURE SET potentiometer. (The resistance of a remote programming resistor is compared to the probe resistance if the MODE switch is in the program position).

1.2.2 The resistance of the probe will always be either less than, equal to or greater than the resistance of the TEMPERATURE SET potentiometer (program resistance). These three situations directly correspond to the chamber temperature being lower than, equal to, or higher than desired. The controller applies heat, coolant, or withholds both to obtain and maintain the selected temperature in the chamber.

1.2.3 Mode - The controller is a three mode unit, i.e.,

a) Heat only
b) No heat or coolant
c) Coolant only

This mode of control insures that LCO_2 or LN_2 is not wasted in a continuous cycling of the heaters and coolant valve such as would be the case for a simple two state output controller.

1.2.4 Further information on the controller may be found in the complete Type III Controller Manual included as part of this information package.

1.3 Null Detector Circuit

1.3.1 A contact closure is provided at the rear which functions when the chamber reaches the indicated set point of the controller. This contact closure may be used to signal external equipment that the chamber has reached selected temperature.

1.3.2 The Delta Design Model 9308 HI-LO Programmer, Model 9311 TEN STEP Programmer, and the Model 9313 HI-LO-AMBIENT Programmer utilize the null contacts to start their timers when they are used with the chamber. This contact closure feature is most useful in automatic test programming applications.

2 INITIAL SETUP

2.1 Electrical Connection - Power connection should be an AC power source rated at 125V - 20 amps - 50/60 Hz or 240V - 15 amps - 50/60 Hz (240V option). THE CHAMBER MUST BE CONNECTED TO EARTH GROUND (GREEN WIRE).

2.2 Liquid Coolant - Liquid Carbon Dioxide (LCO_2) - 1050 psi system (standard). Optional systems are LCO_2 - 300 psi, and Liquid Nitrogen (LN_2) - 100 psi.

2.2.1 Liquid Carbon Dioxide - 1050 psi system. A siphon type liquid CO_2 bottle is recommended.

2.2.1.1 Test the bottle by releasing a small amount of LCO_2 into a white handkerchief. Any brown stain indicates rust which would clog the filter and valve in the chamber. A wet handkerchief indicates water which would either freeze in the valve or clog the injector nozzle. Crack the LCO_2 valve open on the cylinder and notice the spray. It should be a dense, white cloud. It looks thin and gray when the tank is almost empty. An almost empty tank will not give proper cooling and should not be used. Connect the tank of LCO_2 to the rear of the chamber with the supplied high-pressure hose and fittings. Place a small amount of sealing compound on the threads of the male fitting to prevent leakage. DO NOT LET ANY SEALING COMPOUND GET INTO THE VALVE INLET ON THE REAR OF THE CHAMBER. Open the bottle and check for leaks which show as frosty spots on the hose or fittings.

2.2.2 Liquid Carbon Dioxide - 300 psi Low Pressure system.

2.2.2.1 When the in-plant use of liquid CO_2 exceeds approximately 1000 to 2000 pounds per month, a bulk liquid storage system can be installed to reduce the cost of coolant.

Chambers being operated with this type of system have to be fitted with a different CO_2 valve and injector than used on a 1050 psi system. Contact Delta for information concerning valve replacement. If new chambers are ordered for use with a bulk storage 300 psi system, the fact should be stated on the order.

> NOTE: The bulk storage system should be of the recirculating type if possible. If not, the supply should be located as close as possible to the chamber to minimize gas formation in the supply line. This is particularly important in low volume usage systems as the insulation and fluid flow are the factors that prevent boiling of CO_2 in the supply line. Gaseous CO_2 is not an effective coolant.

2.2.2.2 All lines, valves and connecting hoses should be blown out before the chamber is connected. Water is very troublesome and is apparently inherent in some low-pressure refrigerated supplies. If lines are opened to bleed off excessive pressure at shutdown, close them to prevent contamination by condensed moisture. This will help to keep ice from forming in the control valve.

2.3 Liquid Nitrogen

CAUTION

> Oxygen in the air surrounding the chamber inner liner and in the insulation can be liquified at low temperatures. This creates an oxygen rich atmosphere surrounding the heater area. The chamber tends to be self purging as the nitrogen replaces the usual atmosphere near the heaters. Any mixture of oil and liquid oxygen can be explosive so that extreme care must be used during operation at very low temperatures.

2.3.1 A 100 psi valve and stainless steel injector assembly is used for the liquid nitrogen applications. LCO_2 from a tank will not operate properly in a chamber equipped for LN_2.

2.3.2 Connect a liquid nitrogen liquid withdrawal container to the LN_2 input of the chamber with an insulated transfer line. A relief valve should be installed in the line with a relief pressure between 60 and 100 psi for a 2700 cubic foot 50 psi liquid withdrawal container.

3 STARTING UP PROCEDURE

3.1 Precautions

3.1.1 Connect SAFETY PLUG (rear of chamber) when external programmer is not being used. This will preclude any accidental high temperature being obtained if the MODE switch is placed in the PROGRAM position with no programmer connected.

3.1.2 Unplug the chamber from all sources of power before attempting any type of servicing or removal of the controller chassis. The case of the triac switch assembly, located on the controller sub-assembly, is at power line potential and extreme care in servicing or calibration must be exercised.

3.1.3 Insure that the correct type of LCO_2 (liquid carbon dioxide) source is connected to the chamber before operating at low temperature. Recommend standard 50 pound capacity high dry siphon LCO_2 supply. Test the LCO_2 for cleanliness by discharging a quantity of it through a clean white handkerchief. Bits of rust and traces of oil, ice or water indicate contaminated LCO_2 which should not be used.

3.1.4 Ground the case of the chamber to earth ground. When a grounded outlet is not available, use the three-to-two adapter (supplied with the chamber) and connect the green colored "pigtail" to earth ground. The chamber must not be operated without the case grounded.

3.1.5 Operate the chamber at a temperature of 200°C for an hour after prolonged operation at low temperatures. This restores the efficienty of the insulating material by driving out the moisture which has been condensed out of the air.

CAUTION

Liquid oxygen may be formed in the insulation when the chamber is operated at low temperatures. Any mixture of oil and liquid oxygen can be explosive. If oil contamination is suspected, bake the chamber out by operating it at a temperature of 200°C for a period of 3 hours before taking it to extremely low temperatures.

3.1.6 Do not leave liquid nitrogen trapped in a line (valves closed at both ends) as high pressures will be developed as the liquid absorbs heat and becomes gas.

3.2 Controls - See Figure 2.

3.3 Adjusting the Failsafe

3.3.1 To adjust the FAILSAFE high temperature protection unit, rotate the slotted FAILSAFE control. The trip temperature is increased by rotating the control counterclockwise and is lowered by turning the control clockwise. The FAILSAFE setting is preset at the factory at +315°C (maximum rating of standard chamber). If it is desirable to change the setting to a lower temperature setting, operate the chamber at the maximum temperature desired. Adjust the FAILSAFE until it is on the verge of tripping.

CAUTION

Do not rotate the FAILSAFE setting more than one full turn lower than the trip point, as this can damage the unit.

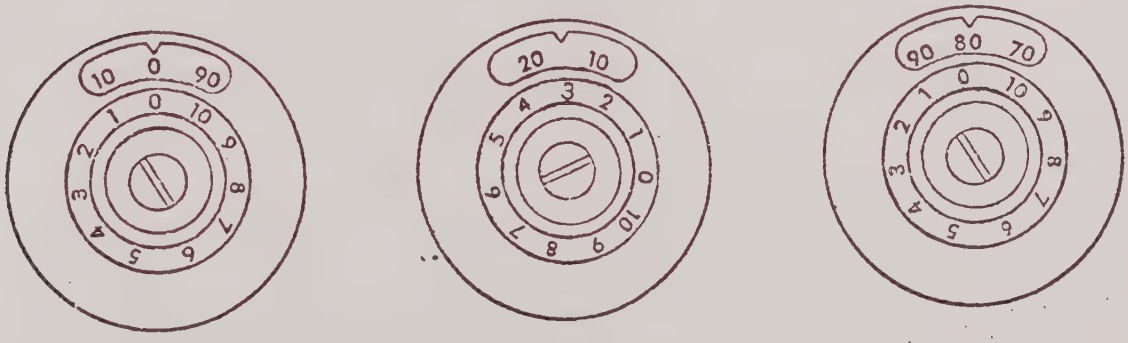
3.4 Setting the Dial Temperature Indicator

3.4.1 Refer to example A - Set both dials at zero.

3.4.2 One complete rotation of the knob equals 100°. Clockwise is plus (+) degrees (F. or C) and counter-clockwise is minus (-) degrees. Each rotation of the knob is indicated by the small dial nearest the knob.

3.4.3 The large dial indicates each degree, every tenth numbered. Thus, as in example B, the large dial is set at 15, and the small dial is beyond 3, therefore the setting is +315°.

3.4.4 When setting to a minus (-) temperature it is necessary to subtract the degrees from 100, i.e., 20 from 100 equals "80" reading on the large dial to have a setting of -20°. This is shown in example C. It will be noted that the zero on the small dial is just to the left of the marker. Also, on the models having a range greater than -100°, it is necessary to keep track of the counter-clockwise rotation of the knob.



A
(0°)

B
(+315°)

C
(-20°)

FIGURE 1
TEMPERATURE SET DIAL

4 PROGRAMMING

4.1 Connect the correct resistances between pins 1 and 3 of the PROGRAM jack. Set the MODE switch to PROGRAM and the HEAT AND COOL switches to their ON positions. The controller will apply heat or coolant as needed to obtain the programmed temperature.

4.2 A safety plug is provided with the chamber and should be kept connected to the PROGRAM input whenever an actual programmer or actual resistance is not connected. The safety plug will prevent the chamber from accidentally being programmed to a very high temperature if the MODE switch is placed in the PROGRAM position with an open PROGRAM input.

4.3 The safety plug disables the heat and cool circuits of the controller when the MODE switch is placed in the PROGRAM position.

5 WARRANTY

Delta Design, Inc. guarantees all products manufactured and sold by it to conform to published specifications and against defective material and workmanship for a period of 90 days from the date of our shipment. Temperature chambers and electronics are warranted for one year from date of shipment. All contactor assemblies are warranted for a period of 90 days or 1/2 million cycles. Obligation under these warranties is limited to repair or replacement by Delta at its plant or one of its authorized service stations, on any of our products which Delta determines to be defective or not in accord with stated specifications. Delta will not accept responsibility for any defect caused by improper use, nor will Delta assume liability for any unauthorized repairs or modifications to its products or materials, even though defective or not in accord with the specifications. In no case will responsibility extend to products, materials, or equipment not manufactured by Delta. All products to be returned to Delta's plant for warranty repair must have prior written approval from Delta Design, Inc., and all return transportation charges will be at the buyer's expense. Delta will not accept liability for any unauthorized returns. No liability will be accepted for any damages to customer's materials, and equipment due to the use or misuse of Delta's products, nor for any loss of profits or other special damages. Delta Design, Inc., reserves the right to change price, design features and/or specifications without notice.

TROUBLE SHOOTING: ELECTRICAL

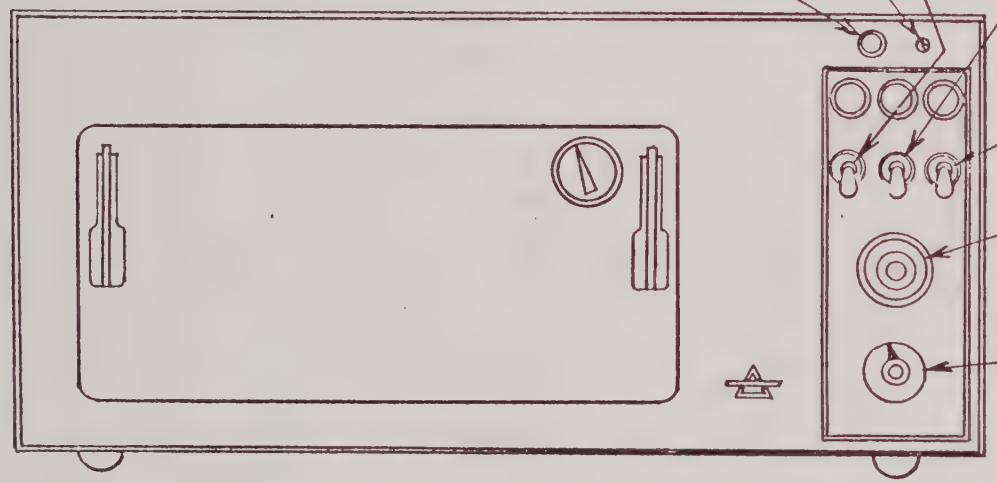
HOW TO USE THIS CHART

1. Turn Mode Switch to Manual.
2. Note Thermometer Reading (Chamber Temperature)
3. Turn Heat and Cool Switches On.
4. Turn Temperature Set Control 50° Higher than Chamber Temperature and note the conditions of the Heat and Cool Lamps.
5. Turn Temperature Set Control 50° Lower than Chamber Temperature and note the conditions of the Heat and Cool Lamps.
   These two situations determine the correct block to read in the chart:
6. Enter the Chart at the Top for the conditions observed in step 4. (50° Higher than Chamber Temperature.)
7. Enter the Chart at the Left Side for the conditions observed in step 5. (50° Lower than Chamber Temperature.)

		LIGHT STATE WITH TEMPERATURE SET DIAL 50° HIGHER THAN CHAMBER TEMP.			
		RED - OFF GREEN - OFF	RED - ON GREEN - OFF	RED - OFF GREEN - ON	RED - ON GREEN - ON
LIGHT STATE WITH TEMPERATURE SET DIAL 50° LOWER THAN CHAMBER TEMP.	RED - OFF GREEN - OFF	Probe Element shorted to case. (Replace) Failure on Amplifier P.C. Board. (Trace signal with scope) Transformer Winding open.	Cool Circuit has failed. Trace signals with scope.		
	RED - ON GREEN - OFF		Probe shorted out. Temp. set Pot. — open. Cool Anticipator winding open. Check between Terminal A and Case of Q8 for 10Ω.		
	RED - OFF GREEN - ON	Failsafe Relay K1 not energizing. Coil resistance will be Approx. 10K. Failsafe open. Heat Triac failed.	NORMAL	Probe Open. Temp. Set. Pot. shorted. Heat Anticipator Winding open: Check between B and Case of Q9 for 10Ω.	Cool Circuit has failed — Trace signal with scope.
	RED - ON GREEN - ON		Heat circuit has failed — Trace signal with scope. Triac failed.		

FAILSAFE ADJUST- LOCATED ON FRONT OF CHAMBER
TURN TO CHANGE TEMPERATURE AT WHICH FAILSAFE WILL TRIP
CAUTION: DO NOT LOWER FAILSAFE TEMP. SETTING UNLESS HEAT SW. IS ON & FAILSAFE IS OFF.

FAILSAFE LAMP- GLOWS RED WHEN FAILSAFE IS TRIPPED



(5) HEAT SWITCH & LIGHT-- SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY HEAT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER RED LIGHT IS ON STEADY WHEN CHAMBER IS HEATING, BLINKS WHEN CHAMBER REACHES SELECTED TEMPERATURE ABOVE AMBIENT

(4) COOL SWITCH & LIGHT--SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY COOLANT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER GREEN LIGHT IS ON STEADY WHEN CHAMBER IS COOLING.

(3) POWER SWITCH & LIGHT--SWITCH ON MAIN POWER ON WHITE LIGHT GLOWS WHEN POWER IS ON.

(2) TEMPERATURE SET DIAL--SET TO DESIRED TEMPERATURE. SELECTS CHAMBER TEMPERATURE IF MODE SWITCH IS IN MANUAL POSITION.

(1) MODE SWITCH-- SET TO MANUAL POSITION. ASSIGNS THE SELECTION OF CHAMBER TEMPERATURE TO TEMPERATURE SET DIAL OR EXTERNAL PROGRAMMER.

MANUAL POSITION: TEMPERATURE SET DIAL DETERMINES CHAMBER TEMPERATURE.

PROGRAM POSITION: PROGRAMMING RESISTANCE CONNECTED TO PROGRAM JACK AT REAR OF UNIT SELECTS CHAMBER TEMPERATURE

CAUTION: ALWAYS CONNECT SAFETY PLUG (AT REAR OF CHAMBER) WHEN AN EXTERNAL PROGRAMMER IS NOT BEING USED

THERMOMETER- INDICATES CHAMBER TEMP. IN TEST VOLUME.

OPERATING INSTRUCTIONS:

A. INSTALL THE CHAMBER, CONNECT POWER CORD TO SUITABLE OUTLET & COOLANT SUPPLY TO VALVE INLET.

B. FOLLOW STEPS 1 THRU 5.

OPERATING INSTRUCTIONS
FIGURE 2

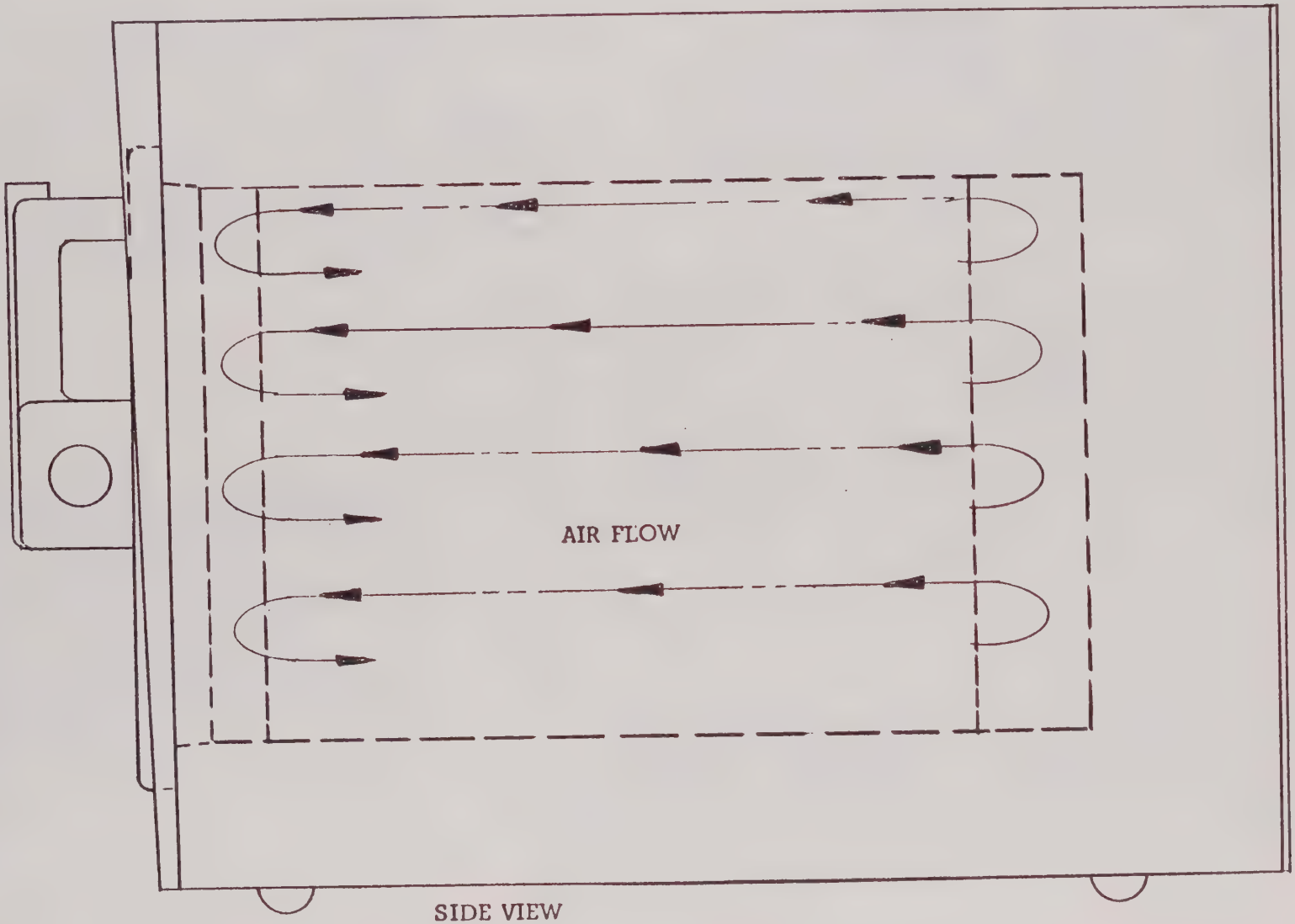


FIGURE 3

CHAMBER AIR FLOW PATTERN

TO REMOVE CO_2 VALVE

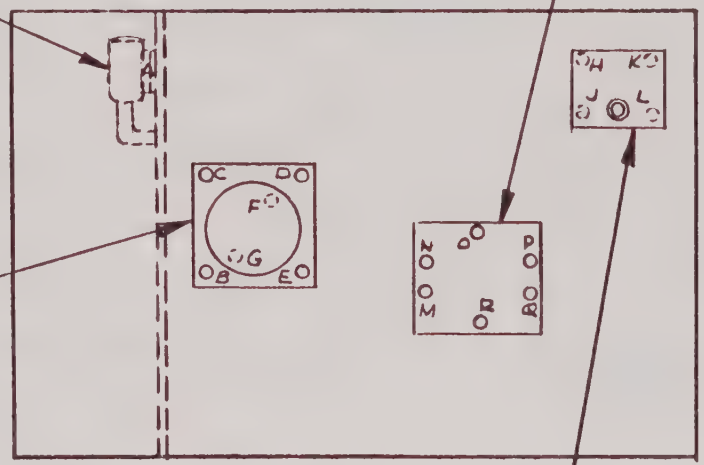
1. UNPLUG CHAMBER POWER CORD
2. REMOVE SIDE PANEL
3. REMOVE WIRES FROM TB2
4. REMOVE MOUNTING SCREWS (A) SEE CO_2 VALVE REMOVAL CHART
5. PULL CO_2 VALVE STRAIGHT OUT
6. AVOID BENDING OR DAMAGE TO INJECTOR STEM.

TO REMOVE HEATERS

1. UNPLUG CHAMBER POWER CORD
2. REMOVE SCREWS FROM REAR COVER
3. UNPACK FIBERGLASS
4. DISCONNECT HEATER WIRES
5. REMOVE (6) SCREWS, M, N, O, P, Q, R
6. PULL OUT HEATER ASSY.

TO REMOVE BLOWERS

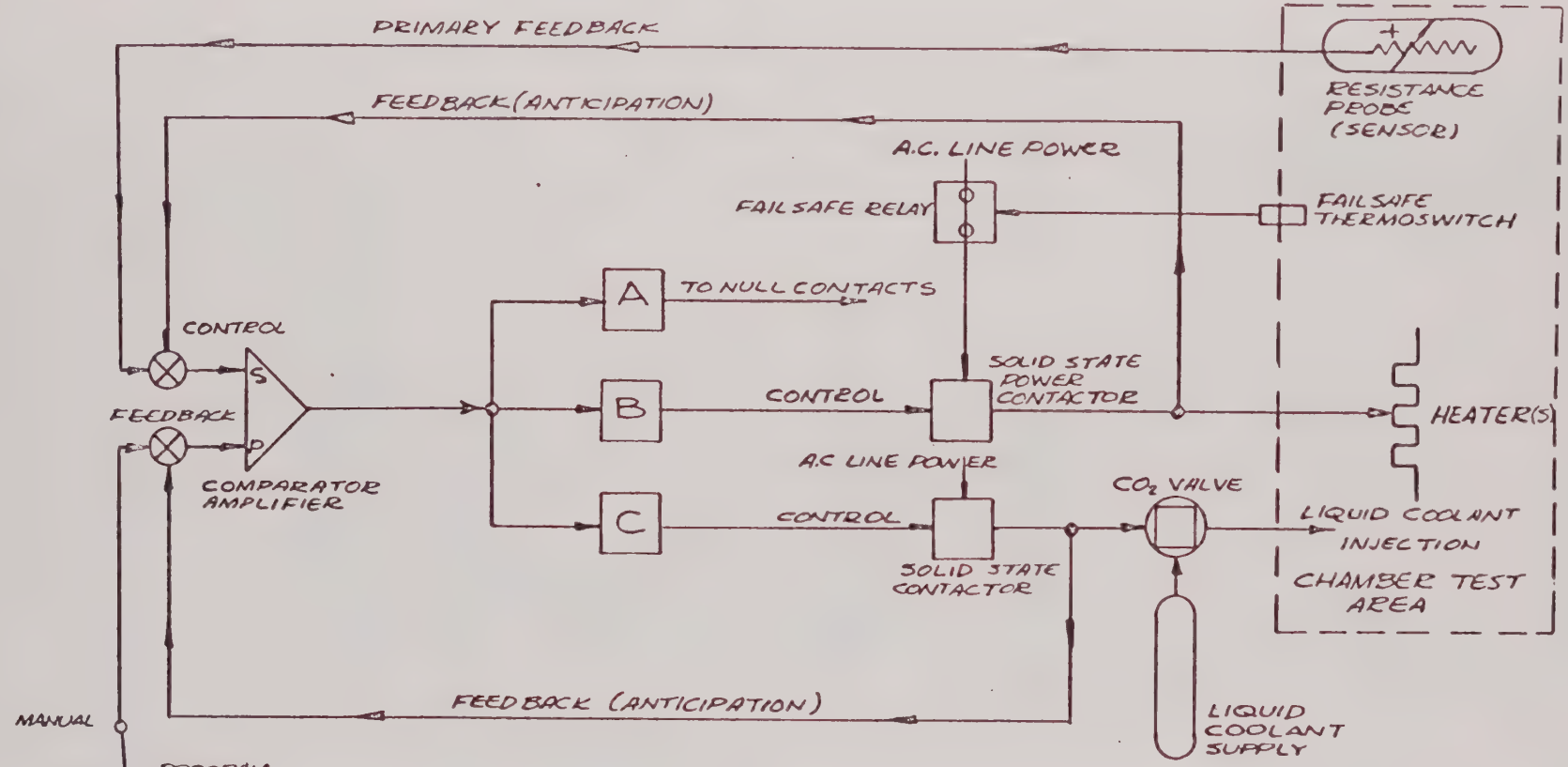
1. UNPLUG CHAMBER POWER CORD.
2. REMOVE 4 SCREWS B, C, D, E & REMOVE GRILL
3. REMOVE (2) WIRE NUTS
4. REMOVE (2) #10 SCREWS AT F & G.
5. PULL MOTOR STRAIGHT OUT



TO REMOVE LN_2 VALVE WHEN USED

1. UNPLUG CHAMBER POWER CORD
2. REMOVE (4) SCREWS AT H, J, K, L
3. PULL LN_2 PACKAGE DIRECTLY TO REAR TO CLEAR LN_2 INJECTOR TUBE.
4. REMOVE WIRE NUTS.

FIGURE 4
CO_2 - LN_2 VALVE REMOVAL



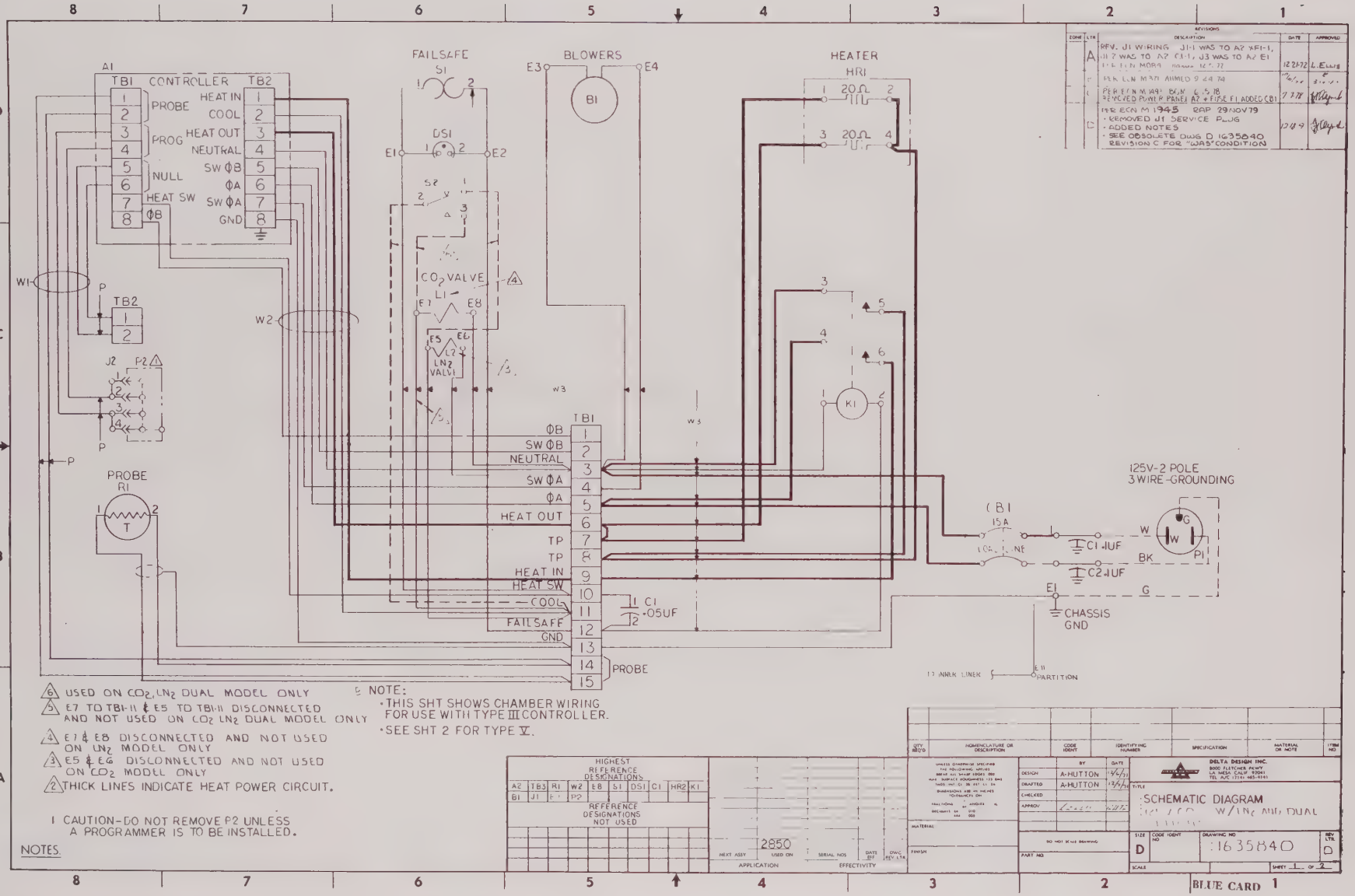
A = NULL DETECTOR SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ = /S/

B = HEAT. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ INPUT AT AMPLIFIER
GREATER THAN /S/

C = COOL, SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /S/ GREATER THAN /P/

TEMPERATURE CONTROL SYSTEM
SOLID STATE, TYPE III
DELTA DESIGN INC.

FIGURE



6 USED ON CO_2, LN_2 DUAL MODEL ONLY

5 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

4 E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

3 E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2 THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION-DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES.

NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER.
- SEE SHT 2 FOR TYPE V.

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REV. J1 WIRING J1-1 WAS TO A2 XF1-1, J1-2 WAS TO A2 C1-1, J3 WAS TO A2 E1 PER ECN M0849	12-27-72	L. Ewing
	B	PER ECN M1349 60.N 6-5-78 REVISED PWR'R PANEL A2 + FUSE F1 ADDED (CB1)	7-7-78	
	C	PER ECN M1945 RSP 29-NOV-79 • REMOVED J1 SERVICE PLUG • ADDED NOTES • SEE OBSOLETE DWG D 1635840 REVISION C FOR "WAS" CONDITION	12-4-79	

HIGHEST REFERENCE DESIGNATIONS

A2	TB3	R1	W2	E8	S1	DS1	C1	HR2	K1
B1	J1	E1	P2						

REFERENCE DESIGNATIONS NOT USED

QTY REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

	BY	DATE
DESIGN	A-HUTTON	9/6/77
DRAFTED	A-HUTTON	9/6/77
CHECKED		
APPROV		

DELTA DESIGN INC.
8000 FLETCHER PKWY
LA MESA CALIF 92041
TEL A/C (714) 465-9761

TITLE: SCHEMATIC DIAGRAM
[illegible] W/LN2 AND DUAL

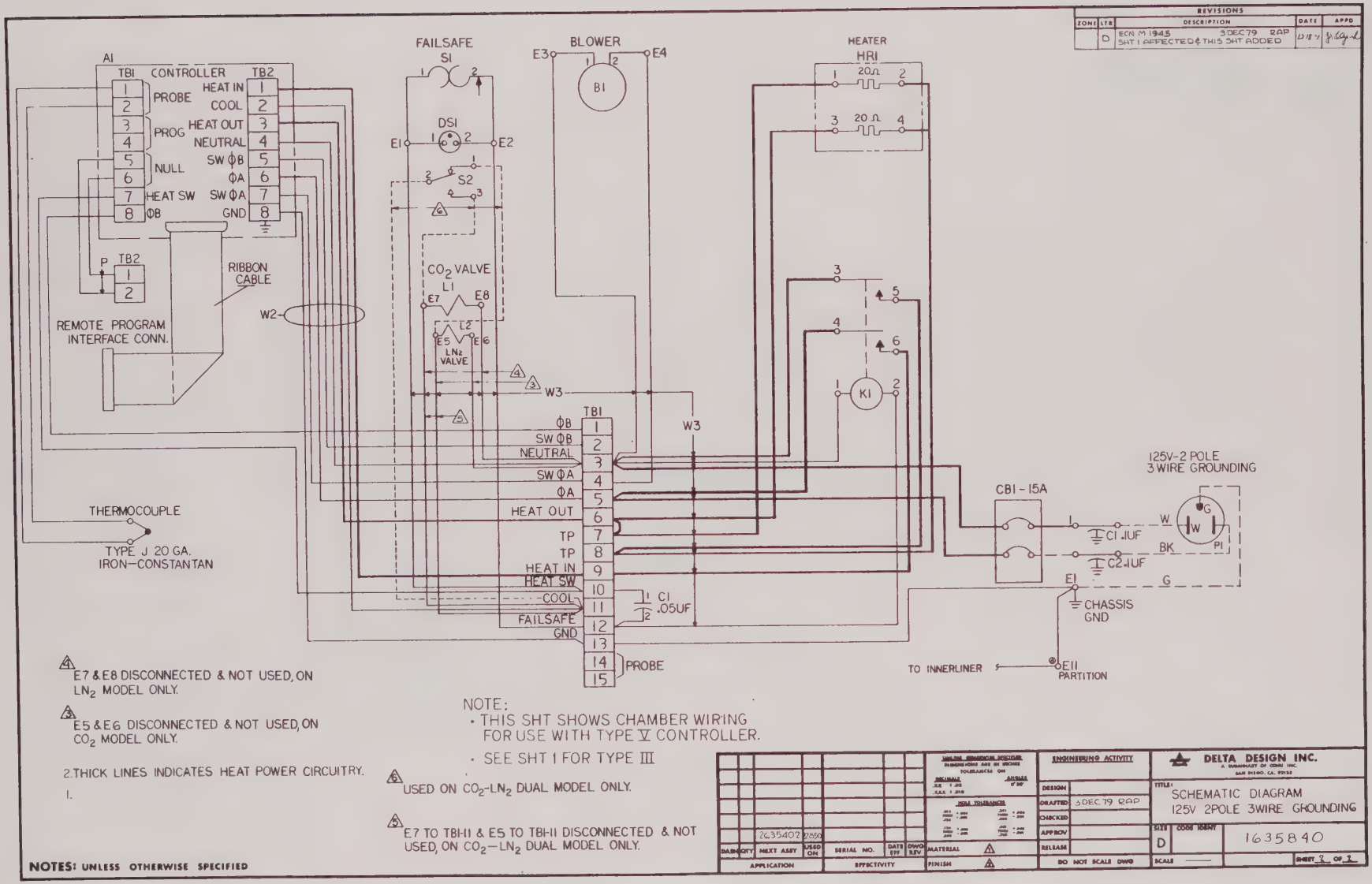
MATERIAL
FINISH
PART NO

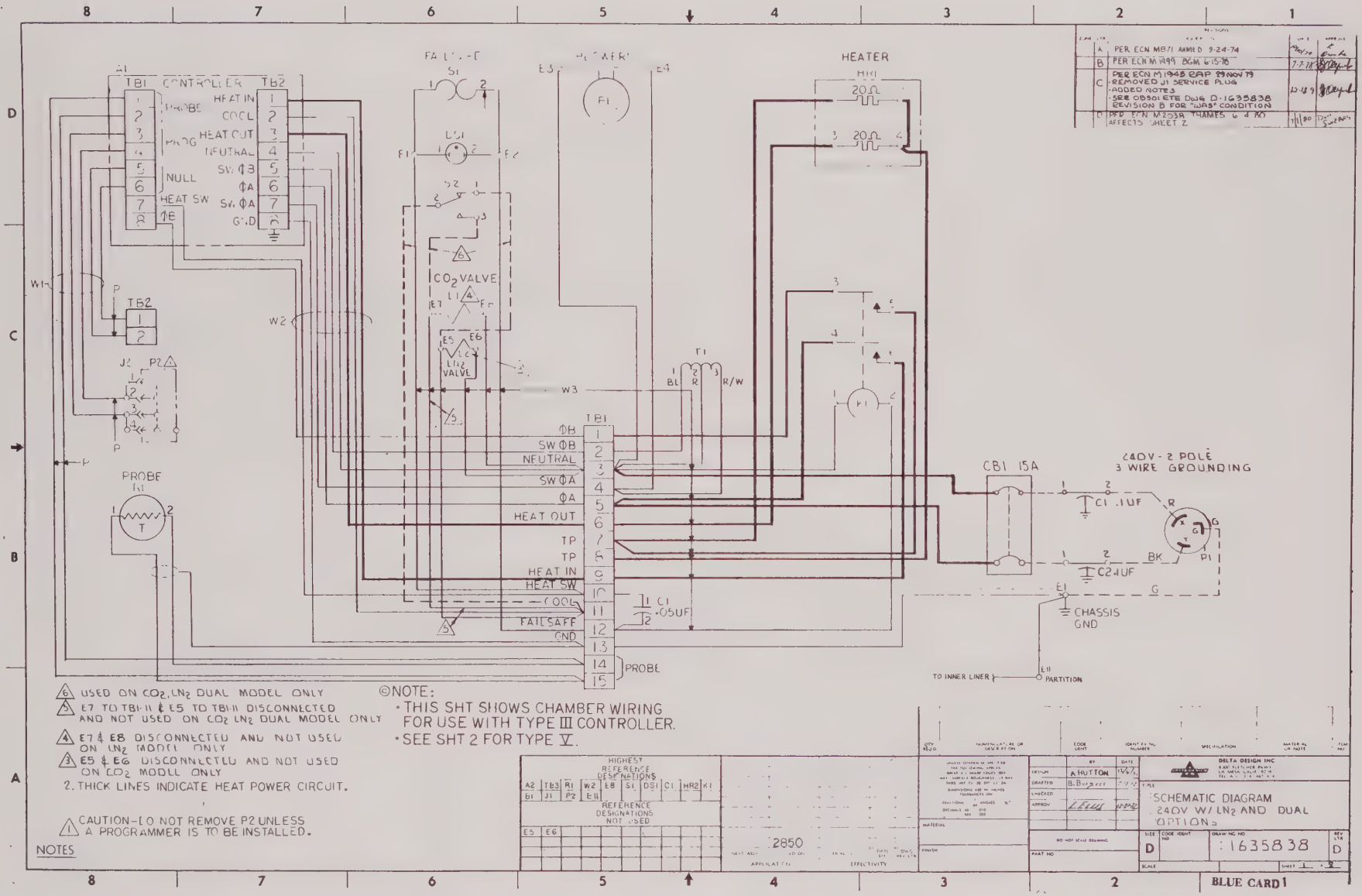
SIZE D | CODE IDENT NO | DRAWING NO 1635840 | REV LTR D

SCALE | SHEET 1 OF 2

NEXT ASSY 2850 USED ON — APPLICATION
SERIAL NOS — EFFECTIVITY
DATE EFF
DWG REV LTR

BLUE CARD


REVISIONS
ZONE LTR DESCRIPTION DATE APPD
D ECN M 1945 SHT 1 AFFECTED & THIS SHT ADDED 3DEC79 RAP
A1
TB1 CONTROLLER TB2
PROBE
PROG
NULL
HEAT SW
ΦB
HEAT IN
COOL
HEAT OUT
NEUTRAL
SW ΦB
ΦA
SW ΦA
GND
P TB2
REMOTE PROGRAM INTERFACE CONN.
RIBBON CABLE
W2
FAILSAFE S1
DS1
S2
BLOWER
B1
E3
E4
E1
E2
CO2 VALVE
L1
E7
E8
L2
E5
E6
LN2 VALVE
W3
HEATER
HR1
20Ω
K1
TB1
ΦB
SW ΦB
NEUTRAL
SW ΦA
ΦA
HEAT OUT
TP
TP
HEAT IN
HEAT SW
COOL
FAILSAFE
GND
PROBE
C1 .05UF
THERMOCOUPLE
TYPE J 20 GA.
IRON-CONSTANTAN
CB1 - 15A
125V-2 POLE
3 WIRE GROUNDING
C1 .1UF
C2 .1UF
W
BK
G
CHASSIS GND
TO INNERLINER
E11
PARTITION
4 E7 & E8 DISCONNECTED & NOT USED, ON LN2 MODEL ONLY.
5 E5 & E6 DISCONNECTED & NOT USED, ON CO2 MODEL ONLY.
2. THICK LINES INDICATES HEAT POWER CIRCUITRY.
1.
NOTE:
• THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
• SEE SHT 1 FOR TYPE III
6 USED ON CO2-LN2 DUAL MODEL ONLY.
7 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED & NOT USED, ON CO2—LN2 DUAL MODEL ONLY.
NOTES: UNLESS OTHERWISE SPECIFIED
ENGINEERING ACTIVITY
DESIGN
DRAFTED 3DEC79 RAP
CHECKED
APPROV
RELEASE
DO NOT SCALE DWG
DELTA DESIGN INC.
TITLE: SCHEMATIC DIAGRAM 125V 2POLE 3WIRE GROUNDING
SIZE D
CODE IDENT
1635840
SCALE
SHEET 2 OF 2
2635402 2550
QUANTITY NEXT ASSY USED ON
SERIAL NO.
DATE EFF
DWG REV
MATERIAL
FINISH
APPLICATION
EFFECTIVITY



A	PER ECN M871 AMMED 9-24-74		
B	PER ECN M1199 BGM 6-15-76	7-7-76	
C	PER ECN M1945 BAP 29NOV79 · REMOVED J1 SERVICE PLUG · ADDED NOTE 3 · SEE 0B501 ETE DWG D-1635838 REVISION B FOR "WAS" CONDITION	12-4-79	
D	PER ECN M2038 THAMES 6 APR 80 AFFECTS SHEET 2	4/11/80	

⑥ USED ON CO_2, LN_2 DUAL MODEL ONLY

⑤ E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

④ E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

③ E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2. THICK LINES INDICATE HEAT POWER CIRCUIT.

⚠ CAUTION-DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES

©NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER.
- SEE SHT 2 FOR TYPE V.

HIGHEST REFERENCE DESIGNATIONS
A2 | TB3 | R1 | W2 | E8 | S1 | DS1 | C1 | HR2 | K1
B1 | J1 | P2 | E11

REFERENCE DESIGNATIONS NOT USED
E5 | E6

2850

DESIGN	A HUTTON	10-6-75
DRAFTED	B. Burgess	7-7-76
CHECKED		
APPROV		

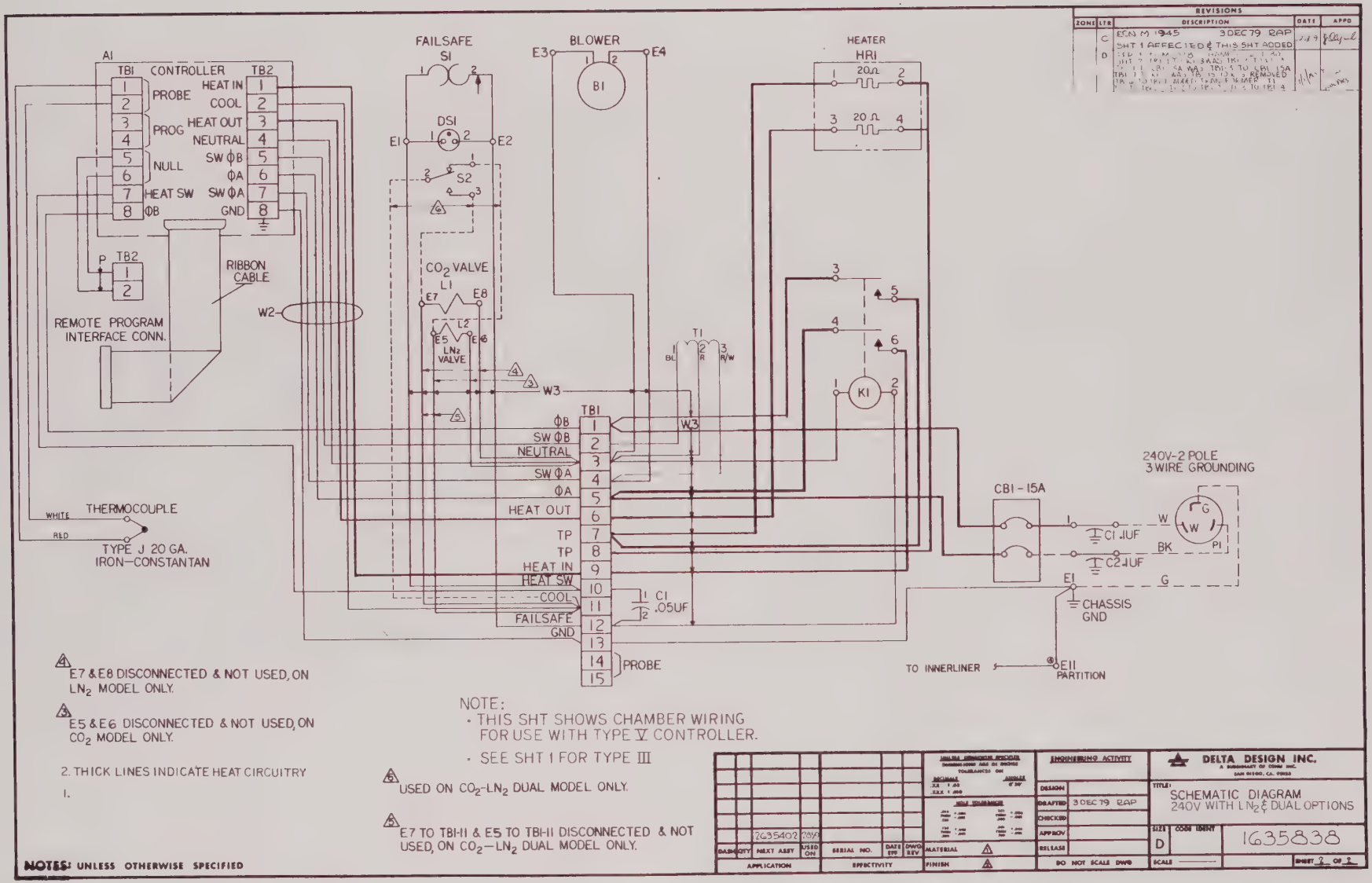
DELTA DESIGN INC
SAN DIEGO, CALIFORNIA

TITLE: SCHEMATIC DIAGRAM 240V W/ LN_2 AND DUAL OPTIONS

SIZE D | CODE IDENT NO | DRAWING NO 1635838 | REV LTR D

SCALE | SHEET 1 OF 2

BLUE CARD 1



1. E7 & E8 DISCONNECTED & NOT USED, ON LN_2 MODEL ONLY.

2. E5 & E6 DISCONNECTED & NOT USED, ON CO_2 MODEL ONLY.

3. THICK LINES INDICATE HEAT CIRCUITRY

4. USED ON CO_2-LN_2 DUAL MODEL ONLY.

5. E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED & NOT USED, ON CO_2-LN_2 DUAL MODEL ONLY.

NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
- SEE SHT 1 FOR TYPE III

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	C	ECN M 1945 3 DEC 79 RAP		
		SHT 1 AFFECTED & THIS SHT ADDED		
	D	[illegible]		

ENGINEERING ACTIVITY
DESIGN
DRAFTED 3 DEC 79 RAP
CHECKED
APPROV
RELEASE
DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONIC INC.
SAN DIEGO, CA. 92123

TITLE: SCHEMATIC DIAGRAM
240V WITH LN_2 & DUAL OPTIONS

SIZE D | CODE IDENT | 1635838

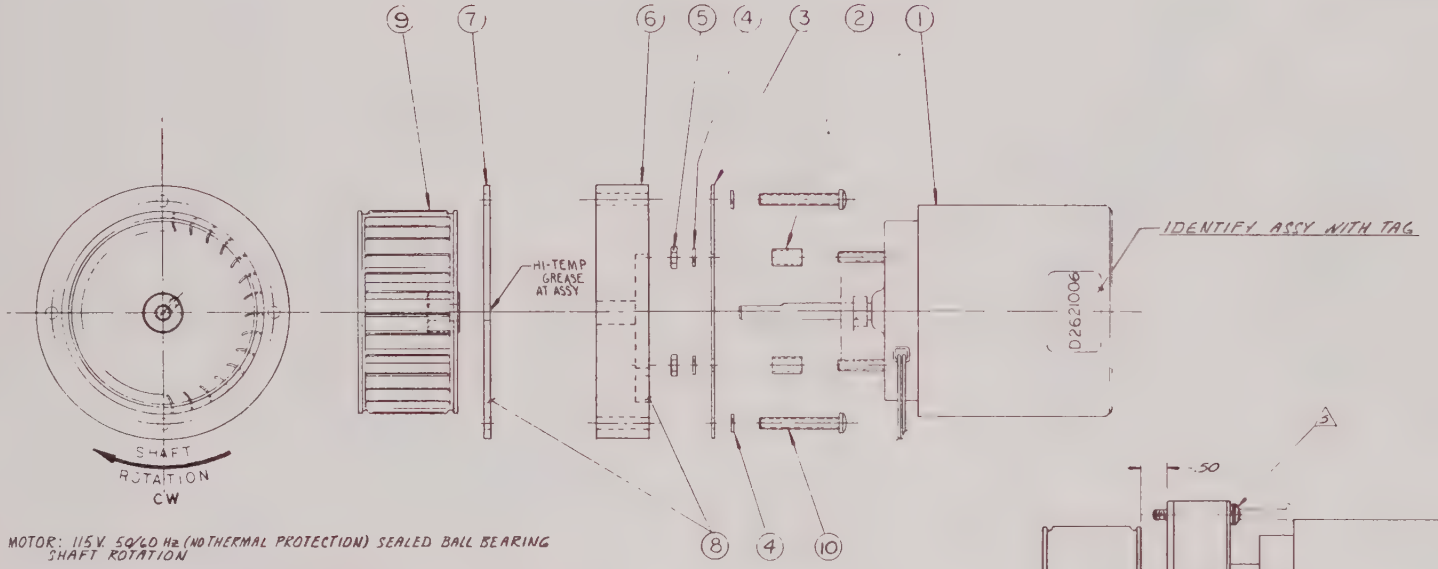
SCALE | SHEET 2 OF 2

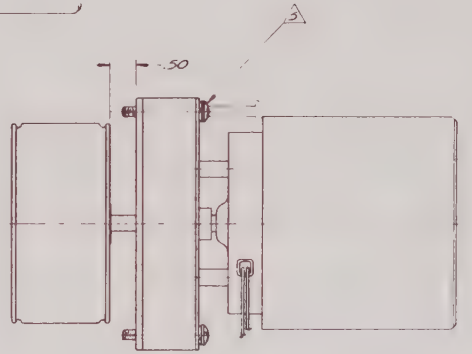
2635402 REV B

QUANTITY | NEXT ASSY | USED ON | SERIAL NO. | DATE EFF | DWG REV

APPLICATION | EFFECTIVITY | MATERIAL | FINISH

REVISIONS				
ZONE	LTR		DATE	APPROVED
	A	PER ECN M1401 REVISED NOTE 3 S-7-78 RGM	5-4-78	





1.) MOTOR: 115 V. 50/60 Hz (NO THERMAL PROTECTION) SEALED BALL BEARING SHAFT ROTATION

2.) IMPELLER: REVCOR #0381-187S (CCW ROTATION) ALTER PER B1632186

3.) RTV ITEM 7 TO ITEM 6; ATTACH ITEM 3 (MOTOR PLATE) TO ITEM 1 (MOTOR) USING , HARDWARE, THEN RTV TO ITEM 6

4.) BLOWER MOTOR ASSY RATED AT 140 C.F.M. AIR MOVEMENT, NOM.

3 TAPE ITEMS 4 & 10 IN PLACE TO PREVENT BEING JARRED LOOSE BEFORE INSTALLING ON CHAMBER.

NOTES.

QTY REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 | DEC. MACH. .XX ± .010 .XXX ± .005 | ANGLES ± 2°
MATERIAL
FINISH

	BY	DATE
DES'GN	L. SMITH	8/1/75
DRAFTED	L. SMITH	8/1/75
CHECKED		
APPROV.		

DELTA DESIGN INC
11121 FLETCHER PKWY
LA MESA, CALIF. 92041
TEL. A/C + NO. 0141

TITLE: 50/60 Hz BLOWER MTR. ASSEMBLY CW SHAFT ROTATION

MODEL NO: STD
PART NO: 2621006

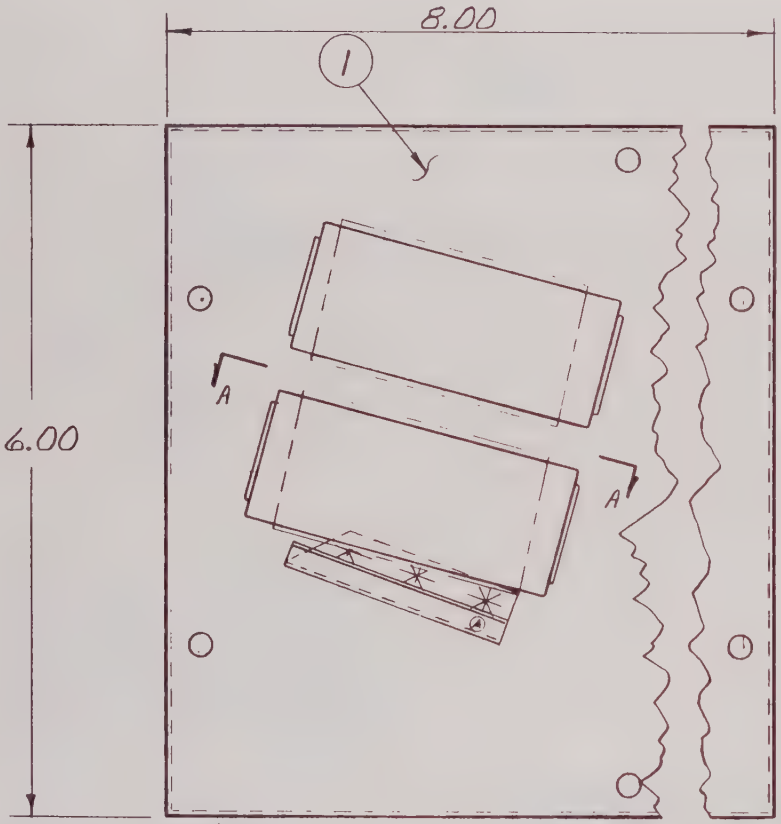
SIZE: D | CODE IDENT NO. | DRAWING NO: 2621006 | REV LTR: A

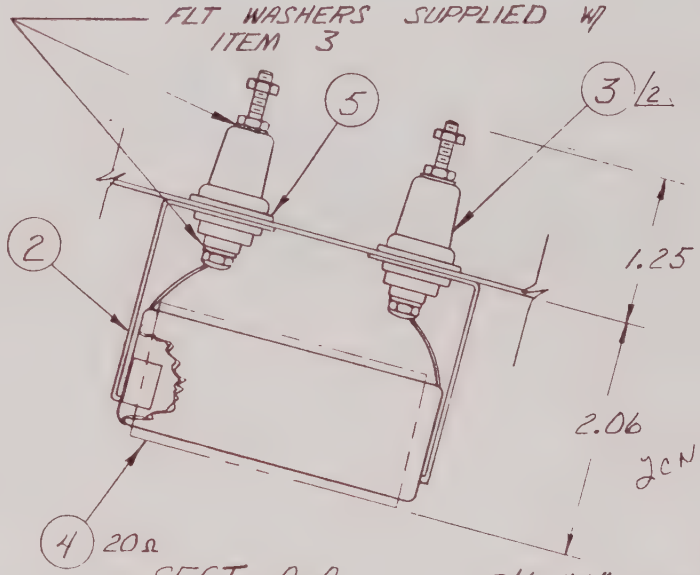
SCALE: FULL | SHEET 1 OF 1

MULTI-RANGE STD 23701 W/C
NEXT ASSY | USED ON | SERIAL NOS | DATE OF EFF | DWG REV LTR
APPLICATION | EFFECTIVITY

BLUE CARD

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PER ECN M683 RBrooks 5-29-74 ADDED BRACKET, PICTURE CHANGE ONLY	5-29-74	H Tull 5-29-74





SECT. A-A

P/L "A" SIZE

ECN X A36 8-30-17

QTY REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

2 DISCARD PAPER WASHERS SUPPLIED WITH ITEM NO. 3. REPLACE WITH ITEM NO. 5.

1. ALL DIM. REF ONLY

NOTES:

UNLESS OTHERWISE SPECIFIED THE FOLLOWING APPLIES
BREAK ALL SHARP EDGES .005
MAX. SURFACE ROUGHNESS 125 RMS
THDS INT CL 2B, EXT CL 2A

NEXT ASSY	USED ON	SERIAL NOS	DATE EFF.	DWG REV LTR
2635402	2850			
APPLICATION		EFFECTIVITY		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 64 ANGLES ± ½°
DECIMALS XX ± .010
XXX ± .005

MATERIAL

FINISH

	BY	DATE
DESIGN		
DRAFTED	KNAPP	5-2-72
CHECKED	Harris	7-6-72
APPROV.	L. ELLIS	7-6-72

DO NOT SCALE DRAWING

PART NO. 2635876

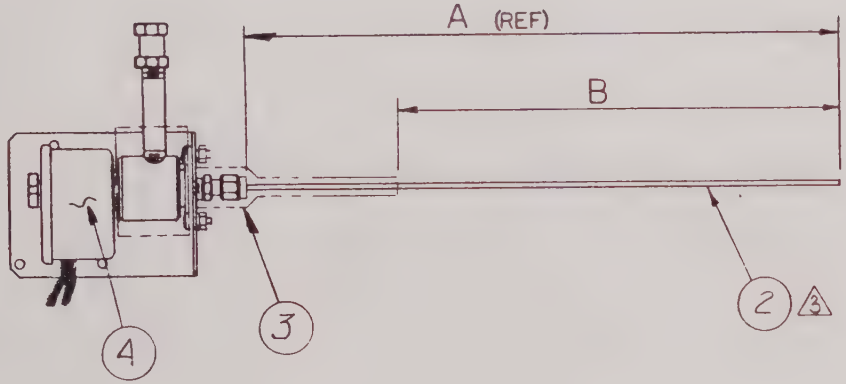
DELTA DESIGN INC.
8000 FLETCHER PKWY
LA MESA, CALIF 92041
TEL: A/C (714) 465-4141

TITLE: HEATER ASSY.

SIZE	CODE IDENT. NO	DRAWING NO.	REV LTR
B		2622520	

SCALE FULL SHEET 1 OF 1

BLUE CARD



REVISIONS				
ZONE	LTR	DESRIPTION	DATE	APPD
	A	PER ECN M694 DTD 6-4-74 F.J.O. 4.75 DIM WAS 3.75		11-3-11 6-6-74
	B	PER ECN M747 REVISED 6-24-74 -001 "B" DIM WAS 4.75	7-8-74	[illegible]
	C	PER ECN M1012 OLEJNIK 6-11-75 -002 "A" DIM WAS 10.44 "B" DIM WAS 3.00	6/12/75	[illegible]
	D	PER ECN M1017 OLEJNIK 7-16-75	7/[illegible]/75	[illegible]
	E	PER ECN 1365 BGM 3-28-78 VALVE ASSY ITEM 4 UPDATED, SEE ECN — TABULATION BLOCK 4.50 WAS 3.00	4-13-78	[illegible]
	F	PER ECN M1521 BGM 7-20-78 INJECTOR ASSY ITEM 2 UPDATED, A+B DIMS CHANGED IN TABULATION B[illegible], SEE ECN	7/31/78	[illegible]

DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

3 INSERT ITEM 2, TUBE, ALL THE WAY TO VALVES INNER ORIFICE BEFORE TIGHTENING DOWN TUBE FITTINGS

4 FINISH (IF APPLICABLE)

5 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTIPLE	STD USAGE

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±.03 .XXX ±.010
ANGLES 0° 30'
HOLE TOLERANCES
.613 THRU .733 +.006 -.001
.351 THRU .500 +.006 -.001
.736 THRU .750 +.008 -.001
.501 THRU .750 +.008 -.001

MATERIAL 1

FINISH 4

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	KNAPP 3-29-73
CHECKED	[illegible]
APPROV	[illegible] 4-4-73
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONTROL INC.
5725 KEARNY VILLA RD SAN DIEGO, CA. 92123 - TEL (714) 292-5000

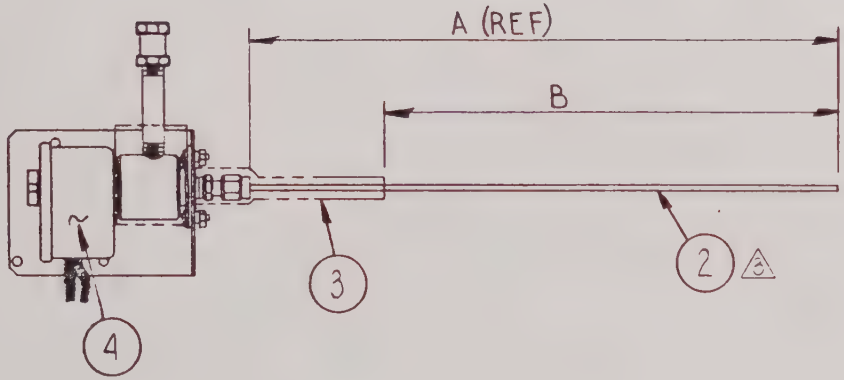
TITLE: CO_2 ASSY (900 PSI) SINGLE STEM

SIZE B | CODE IDENT | 2618016

SCALE 1/2 X | SHEET 1 OF 1

INITIAL RELEASE ECN [illegible]

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	B	PER ECN M1365 4-14-78 F.J.O.	4-14-78	
	C	PER ECN M1521 BGM 7-21-78 INJECTOR ASSY. ITEM 2, UPDATED, A & B DIMS CHANGED IN TABULATION BLOCK SEE ECN	7-31-78	



DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

5 INSERT ITEM 2, TUBE, ALL THE WAY TO VALVE'S INNER ORIFICE BEFORE TIGHTENING TUBE FITTINGS

4 FINISH (IF APPLICABLE)

4 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-STD USAGE	

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES: 0° 30'
HOLE TOLERANCES

MATERIAL 3

FINISH 4

ENGINEERING ACTIVITY: ECN 1365

DESIGN	
DRAFTED	BGM 3-26-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

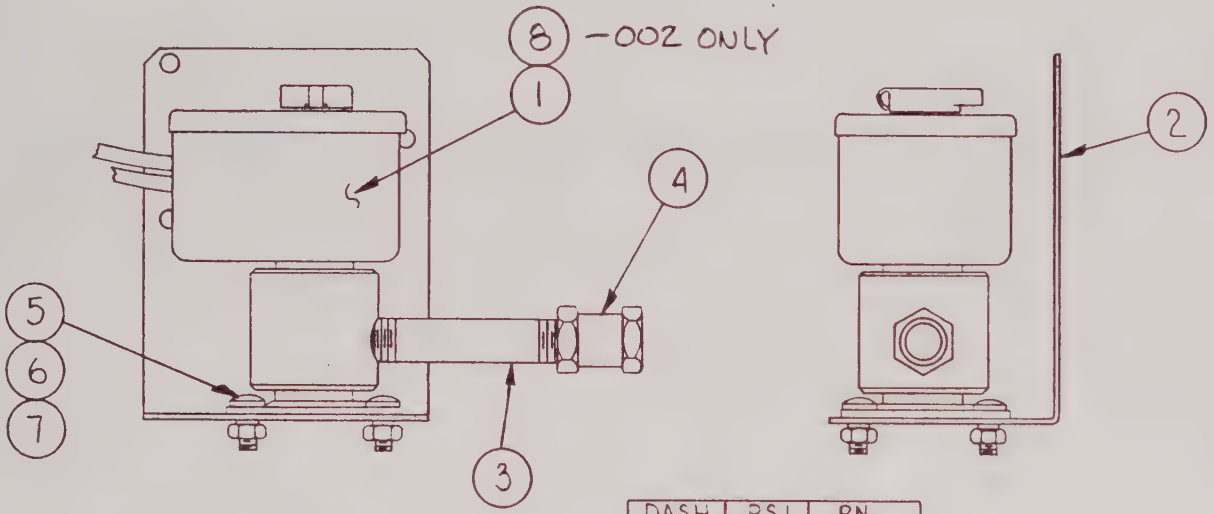
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 ASSY. (300 PSI) SINGLE STEM

SIZE	CODE IDENT	
B		2618015

SCALE 1/2 SHEET __ OF __

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



DASH	PSI	PN
-001	900	1800117
-002	300	1800105

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-USAGE	

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0°30'
HOLE TOLERANCES

MATERIAL ⚠

FINISH ⚠

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	BGM 3-24-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

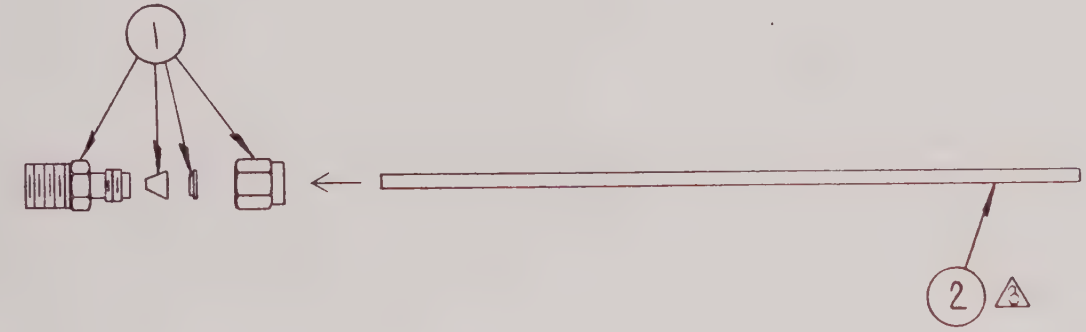
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 VALVE & BRACKET ASSY

SIZE B | CODE IDENT | 1647407

SCALE | SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



4) FOR INSTRUCTIONS ON HOW TO ASSEMBLE SEE NEXT ASSEMBLY

3 REMOVE ALL BURRS & SHARP EDGES, CLEAR I.D. OF ANY OBSTRUCTIONS

4 FINISH (IF APPLICABLE)

5 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		2618016	-002
		2618015	-001

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES: 0° 30'

HOLE TOLERANCES

MATERIAL 1

FINISH 4

ENGINEERING ACTIVITY: ECN M152

DESIGN	
DRAFTED	BGM 7-14-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF COMU INC.
SAN DIEGO, CA. 92123

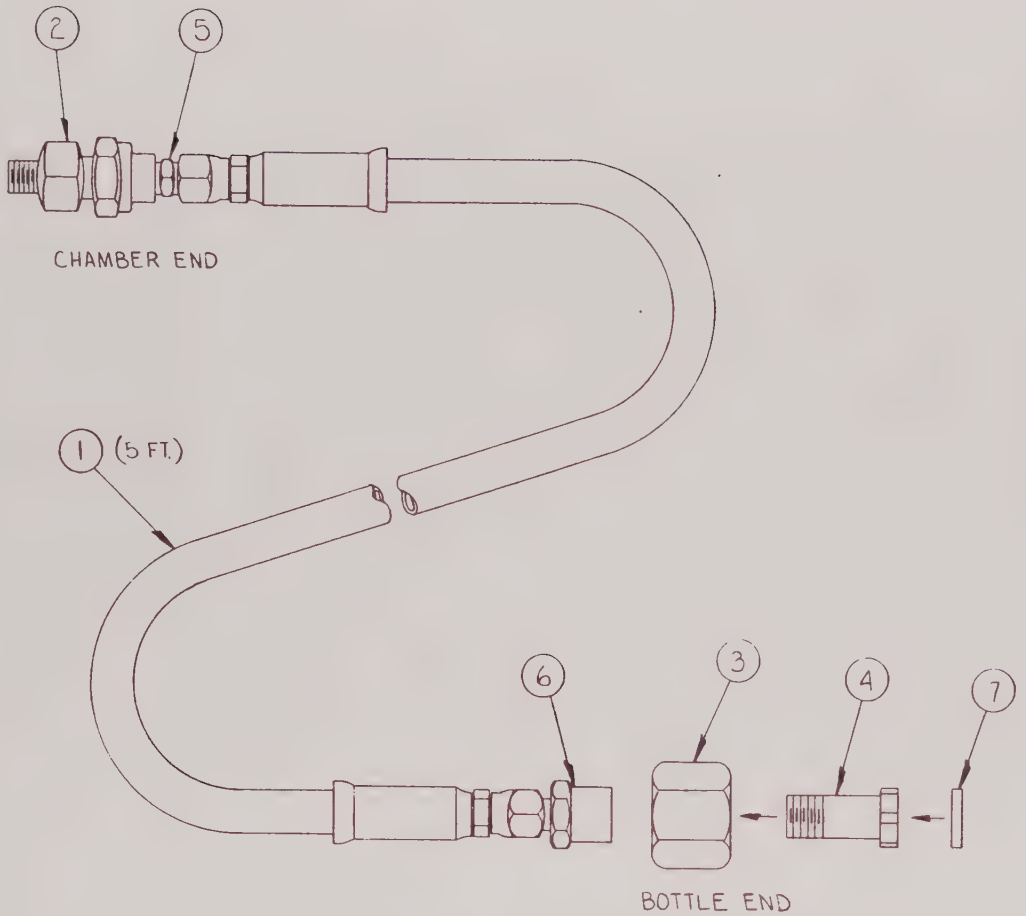
TITLE: INJECTOR ASSY, CO_2 SINGLE STEM

SIZE: B | CODE IDENT | 1647840

SCALE NONE | SHEET __ OF __

BUY CARD

ZONE	LTR	DESCRIPTION	DATE	APPD



DASH	QTY	NEXT ASSY	USED ON
001	1	1640111	8000
001	1		7650
001	1	2636342	6400
001	1	2635601	5700
001	1	2636283	3900
001	1	2635402	2850
001	1	2605110	2300

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0°30'

HOLE TOLERANCES
.013 THRU .123 ± .004 / ± .001
.133 THRU .200 ± .006 / ± .001
.136 THRU .250 ± .008 / ± .001
.251 THRU .750 ± .008 / ± .001

MATERIAL ⚠
FINISH ⚠

ENGINEERING ACTIVITY
ECN M1622

DESIGN	B NIELSEN 10-2-73
DRAFTED	
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: HOSE SHIP KIT

SIZE C | CODE IDENT | 2618020

SCALE .71 | SHEET 1 OF 1

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

BLUE CARD

INDEX OF ASSEMBLIES - 2850 CHAMBER

	TITLE	SIZE & NO.	SHEET
1).	Chamber Ass'y	D2635402	1
2).	Innerliner Ass'y	D2635382	1
3).	Innerliner Spotweld Ass'y	D2635381	1
4).	Sheet, Top Ass'y	C2635380	1
5).	Sheet, Bottom Ass'y	C2635377	1
6).	Sheet, R. Baffle Ass'y	B2635371	2
7).	Can Ass'y	B2632196	2
8).	Partition Ass'y	D1643276	3
9).	Panel Ass'y, Rear	D2635394	3
10).	Panel Ass'y, R. Side	D2635396	3
11).	Panel Ass'y, Bottom	D2635397	3
12).	Bezel Ass'y	D2635401	3
13).	Cable Ass'y W1	A2635264	4
14).	Cable Ass'y W2	A2635265	4
15).	Weld Ass'y, Tube Guide	B1640309	4
16).	Motor Ass'y, Blower	D2621006	4
17).	Thermoswitch Ass'y	B2602503	5
18).	Heater Ass'y	B2622520	5
19).	Element Ass'y, 20ohm	B2635875	5
20).	CO_2 Ass'y	B2618016	6
21).	Injector Ass'y, CO_2 Single Stem	B1647840	6
22).	CO_2 Valve & Bracket Ass'y	B1647407	6
23).	Plate Ass'y, Power	C2635057	7
24).	Capacitor Ass'y, Mod	A2635048	7
25).	Cable Ass'y	A2635833	8

	TITLE	SIZE & NO.	SHEET
26).	Ship Kit Ass'y	C2618020	10
27).	CO_2 Ass'y, Single Stem	B2618015	11
28).	Injector Ass'y CO_2 Single Stem	B1647840	11
29).	CO_2 Valve & Bracket Ass'y	B1647407	11

PL 2635402 REV ____ SHT 1 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY APPVD CK'D ____ APPD ____

REV	ECN	DATE	BY	APP
R	1521	7-2-[illegible]	[illegible]	[illegible]
S	1629	10-[illegible]	[illegible]	[illegible]
T	1720	12-[illegible]	[illegible]	[illegible]

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO ____ S.O. NO ____

QTY ____ PROM DATE ____ ACT ____

RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
00	X					D	2635402	K	CHAMBER ASS'Y. (2850)		2635402
00											
00	REF					D	1635840		SCHEMATIC		
00	REF					D	1635838	A	SCHEMATIC 240 VAC		
00	REF					C	1635836		125 TO 240 VAC CONVERSION		
00	REF		⚠			C	1640222	A	LN2 INSTAL. ASS'Y. - VALCOR VALVE (IN FIELD)		1640222-006
00	REF					D	1643453	B	CO2 TO LN2 CHMB. CONVERSION ASS'Y.		
00	REF					D	2639166	C	CO2 - LN2 DUAL CONVERSION		
00	REF					D	1640082	B	OPTION CO2 TO LN2 WITH REDUNDANT VALVE		1640082-001
00	REF					D	1640082	B	OPTION CO2-LN2 DUAL WITH REDUNDANT VALVE		1640082-002
00	REF					P/L	1648289		TOP ASSY, TYPE III CONTROLLER		
00											
01	1					D	2635382	B	INNERLINER ASS'Y.		2635382
00											
00											
01	1					D	2635381	A	INNERLINER SPOTWELD ASS'Y.		2635381
00											
00											
01	1					C	2635380	A	SHEET, TOP ASS'Y.		2635380
00											
01	1					C	2635380	A	SHEET, TOP		1635380
02	2					A	1635379		SHEET, ANGLE		1635379
03	1					A	1635378		SHEET, DEFLECTOR		1635378
04	1					B	1635366		SHEET, ANGLE		1635366
05											
06											
02	1					C	2635377		SHEET, BOTTOM ASS'Y.		2635377
00											
01	1					C	2635377		SHEET, BOTTOM		1635377
02	2					A	1635379		SHEET, ANGLE		1635379
03	1					B	1635366		SHEET, ANGLE		1635366
04											
05											

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC	MANUFACTURE ACT STD	ACT EST	ACT COMP	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ THESE DWGS. ARE FOR OPTIONAL EQUIP. ONLY, AND ARE NOT PART OF BASIC CHAMBER.

P/L 2635402

PL 2635402 REV ____ SHT 2 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ARCH~~ACK'D ____ APPD ____

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
06											
03	1					D	1635376	C	SHEET, RIGHT		1635376
04	1					D	1635375	B	SHEET, LEFT		1635375
05											
06	1					B	1635373	B	SHEET, TOP DEFLECTOR		1635373
07	1					B	1635372	A	SHEET, BOTTOM DEFLECTOR		1635372
08	1					B	1630007	C	RETAINER		1630007
09	1					B	1634771	C	TUBE, CO_2 VENT		1634771-005
10	1					B	1634780	E	TUBE, LN_2 GUIDE		1634780-010
11	1					B	1634774		TUBE, PROBE GUIDE		1634774-004
12											
13											
14											
15											
02	1					B	2635371		SHEET, RIGHT BAFFLE ASSY.		2635371
00											
01	1					B	1635370		SHEET, RIGHT BAFFLE		1635370
02	1					A	1635369		SHEET, PROBE GUARD		1635369
03											
03	1					B	1635368		SHEET, LEFT BAFFLE		1635368
04	1					C	1635367	B	SCROLL	1635367	M/F 2100701
05	1					B	2632196	D	CAN ASS'Y.		2632196-004
00											
01	1					B	1632350	C	CAN		1632350-004
02											
03											
04	2					A	1631838	A	TAB		1631838
05	1								GROMMET		1500026
06											
06	16								*4 × 1/4 PHP-SMS		6904142-400
07	6								*6 × 3/8 PHP-SMS		6906382-400
08	1					B	1600015		SCROLL RING		1600015
09	1					C	1635374		SHEET, BACK		1635374

REV	ECN	DATE	BY	APP

JOB QTY	ADJ	QTY REQ	TAB CD	PURCHASING PO NO	QTY	DUE	REQ	MANUFACTURE ACT STD HRS	EST ACT COMPL	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

P.L 2635402 REV ____ SHT 3 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY [illegible] CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REQ	MANUFACTURE ACT EST STD	ACT	PLATE PAINT IN	OUT	AH54
10	A/R								RTV (RED)	DOW-CORNING	2400003												
11																							
12																							
13																							
14																							
02	1					D	1643276	A	PARTITION ASS'Y.		1643276-001												
00																							
00	REF					C	1635989	D	SILKSCREEN		1635989												
01	1					D	1643276	A	PARTITION .06 AL. ALY.	3003-H14 FINEBARK	1643276												
02	9								*6-32 RIVNUT, FLT. HD.		1700036												
03	6								*8-32 RIVNUT, FLT. HD.		1700006												
04																							
03	1					D	2635394	C	PANEL ASS'Y., REAR		2635394												
00																							
01	1					D	2635394	C	PANEL, BACK		1635394												
02	8								*6-32 RIVNUT, CSK. HD.	A6-106	1700037												
03																							
04	1					D	1635395	B	PANEL, LEFT SIDE		1635395												
05	1					D	2635396		PANEL ASS'Y, RIGHT SIDE		2635396												
00																							
01	1					D	2635396		PANEL .062 AL. ALY.	3003-H14 FINEBARK	1635396-001												
02	7								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037												
03	1								*8-32 RIVNUT, CSK. HD.	BF GOODRICH A8-106	1700005												
04																							
06	1					D	2635397		PANEL ASS'Y., BOTTOM		2635397												
00																							
01	1					D	2635397		PANEL, BOTTOM		1635397-001												
02	4								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037												
03	4								*10-32 RIVNUT, FLT. HD.	BF GOODRICH A10-80	1700035												
04																							
07	1					D	1635398	B	PANEL, TOP		1635398												
08	1					D	1600526	H	PANEL, FRONT		1500526												
09	1					D	2635401	B	BEZEL ASS'Y.		2635401												

NOTES:

P/L 2635402

P/L 2635402 REV ____ SHT 4 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY ~~Arcola~~ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. ____ S.O. NO ____
QTY ____ FROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO
00											
01	2					B	1634689	B	ANGLE, BEZEL		1634689-003
02	2					B	1634689	B	ANGLE, BEZEL		1634689-004
03											
10	1					A	2635264	A	CABLE ASS'Y. (W1)		2635264-001
00											
01	A/R								WIRE, 18 AWG	COHU STK.	7700618-999
02	6								SOLDERLESS TERMINAL	(SPADE)	1500055
03											
04											
11	1					A	2635265	B	CABLE ASS'Y. (W2)		2635265-004
00											
01	A/R								WIRE 14 AWG	COHU STK.	7700614-999
02	A/R								WIRE 18 AWG	COHU STK.	7700618-999
03	8								SOLDERLESS TERMINAL	(SPADE)	1500055
04	2								SOLDERLESS TERMINAL	(SPADE)	150054
05											
06											
12	1					A	1602967	D	OUTER PLATE, VENT		1600533
13	1					A	1602968	D	GASKET, VENT		2400063
14	1					B	1640309		WELD ASS'Y.-TUBE GUIDE		1640309-001
00											
01	1					B	1640309		PLATE (1.25 × 1.25 × .032)	302-304 SST	1640309-101
02	1					B	1640309		TUBE (.50 O.D. × .028 WALL × 1.00 LG.) WELDED & DRAWN		1640309-102
03											
15	4								GASKET, STRIP		2400024
16	1					B	1640100		FLEXIDRIVE	1640100-101	M/F 1500451
17	1					D	2621006	A	MOTOR ASS'Y., BLOWER		2621006
00											
01	1					C	1632174		50/60 Hz MOTOR		2100652
02	4					B	1632176		INSULATION SPACER		4100174
03	1					B	1632177		MOTOR PLATE		1632177
04	8								#10 LOCKWASHER		6610011

JOB QTY	ADJ	QTY REC	FAB CO	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT QTY STD HRS	CUM	PLATE/PAINT N OUT	AREA

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 5 OF 11
DESCRIPTION TOP ASS'Y (2850)
NEXT ASSY END ITEM BY F.R.Mack'D ____ APP'D ____

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO
05	4								* 10-32 HEX NUT		6710321
06	1					C	1635327	A	SPACER		4100173
07	1					B	1632180	A	SCROLL GASKET		0200116
08	A/R								RTV-106		2400003
09	1					B	1632186		STRIP WHEEL		2100505
10	4								* 10-32 x 1½ PHP-MS		6810326-424
11											
12											
13											
14											
18	2					B	1600091	B	SHIM, KEEPER ⚠		1600091
19	2					C	1635605	B	LATCH KEEPER		4100051
20	4								FOOT, RUBBER		1500416
21	A/R								INSULATION, FIBERGLASS		2400025
22	A/R								INSULATION, FRESSTITE		2400026
23	1					B	2602503	C	THERMOSWITCH ASS'Y.	(S1)	2300004
00											
01	1								THERMOSTAT	VULCAN 1DIC2-4	2300004
02	1					A	1600007	C	BRACKET		1600007
03											
24	1								LAMP, NEON	(DS1)	1400082
25	1								RELAY	(K1)	1400218
26	1								CAPACITOR .05 μf 400V	(C1)	0700520-400
27	1					B	2622520	A	HEATER ASSY.	(HR1)	2622520
00											
01	1					C	1635870	C	SHEET, HEATER		1635870
02	4					B	1635868		STANDOFF, HEATER		1635868
03	4								INSULATOR, CERAMIC		1500327
04	2					B	2635875		ELEMENT 20Ω		2635875-004
00											
01	1					B	2635875		ELEMENT, HTR. 20Ω	LYON-RURAL ELECT	2200005
02	2								STUD ⚠	BIRNBACH #458	1500327
03	2								NUT ⚠	BIRNBACH #458	1500327

JOB QTY	AUD	QTY REC'D	FAB CD	PURCHASING P.O. NO.	QTY	DATE REQ'D	MANUFACTURE STD HRS	ACT EST ACT COMP COMP	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ USE ONLY AS REQ'D. TO OPTIMIZE SEAL.
⚠ ITEMS 2 & 3 ARE SEPARATED FROM STK. ITEM 1500327 AND SUPPLIED TO VENDOR.

P/L 2635402

PL 2635402 REV — SHT 6 OF 11

DESCRIPTION TOP ASS'Y. (2850)

NEXT ASSY END ITEM BY — CK'D — APPD —

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. — S.O NO —
QTY — PROM DATE — ACT —
RUN * — MACH —

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO	JOB QTY	AUX	QTY REC	FAB CO	PURCHASING P.O. NO	QTY DUE	MANUFACTURE ACT EST ACT REGISTD HRS	COMP	COM	PLATE/PAINT IN	OUT	AREA
04																							
05																							
05	4					A	1635867		GASKET INSULATOR		1635867												
06																							
07																							
08																							
28	1					B	2618016	F	CO_2 ASS'Y. (L1)	900 P.S.I. ⚠4	2618016-005												
00																							
~~01~~	~~1~~					~~B~~	~~2618005~~		~~CO_2 VALVE WELDMENT~~		~~2618005-001~~												
02	1					B	1647840		INJECTOR ASS'Y, CO_2 SINGLE STEM		1647840-110												
00																							
~~01~~	~~1~~					~~C~~	~~1618012~~	E	~~MOD, PIPE PLUG~~	~~1618012-002~~	~~MF 3600078~~												
C1	1								FITTINGS, INJECTOR		3600197												
C2	1					B	1647841		TUBE, CO_2 INJECTOR	TYPE 300 SS 1/8 O.D., .022 I.D.	1647841-115												
~~03~~	~~1~~					~~B~~	~~1618006~~	B	~~TIP, CO_2 INJECTOR~~	~~1618006-002~~	~~4100040~~												
03	3/16								INSULATION	PRESSTITE TYPE 5	2400026												
04	1					B	1647407		CO_2 VALVE & BRACKET ASS'Y.		1647407-001												
00																							
01	1								SOLENOID VALVE	(900 P.S.I.)	1800117												
02	1					B	1645008		BRACKET, CO_2		1645008-101												
03	1								NIPPLE, BRASS-1/8 NPT × 2.00		3601038												
04	1								COUPLING 1/8 NPT		3600102												
05	4								* 8-32 × 3/8 PHP-MS		6808323-804												
06	4								* 8 SPLIT LOCKWASHER		6608010												
07	4								* 8-32 HEX NUT		6708320												
08																							
09																							
10																							
05																							
06																							
29	1								TERMINAL BLOCK	(TB1)	1400572												
~~30~~	~~1~~					C	2635055	A	PANEL ASS'Y. SIGNAL	(A3)	2635055												
00																							

NOTES: ⚠4 CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

P/L 2635402

PL 2635402 REV ____ SHT 2 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY Arena CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
9725 RUSSINY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S/O NO ____
QTY ____ FROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY B QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO
00											
01	1					B	1635054	C	PANEL, SIGNAL		1635054
02	1					B	2600409		PLUG MOD, AMPHENOL	(P1)	2600409
00											
01	1								PLUG, 4 PIN AUDIO	AMPHENOL 91 MC4M	2000051
02	1								CHAIN, 4"		1500226
03	2								#6 EYELET		3600101
04	1								#2-56 x 5/32 PHP-MS		
05	A/R								WIRE, 20 GA BUS		
06	1								#2 FLAT WASHER		6602000000
07											
03	1								SOCKET	(J1)	2000044
04	1								TERMINAL BLOCK	(TB1)	1400509
05	1					A	1600012	C	NULL TERMINAL COVER		1600012
06	4								#6 x 1/2" PHP-SMS		6906120-400
07	2								#6-32 x 3/4 PHP-MS		6806323-404
08											
09											
10											
~~01~~	~~1~~					~~C~~	~~2635058~~	~~K~~	~~PANEL ASS'Y., POWER~~	~~(A2) 125V~~	~~2635058~~
00											
00											
01	1					C	2635057	H	PLATE ASS'Y., POWER		2635057-003
00											
00	REF					C	1635604	A	SILKSCREEN MASTER		1635604-003
01	1					C	2635057	H	PANEL .08 AL ALY SHT.	6061-T6	1635057-003
02	4								#6-32 RIVNUT, CSK. HD.	BF GOODRICH AG-100	1700037
03											
02	1								FUSEHOLDER	(XF1)	1400050
03	2					A	2635048	A	CAPACITOR, MOD.	(C1, C2)	2635048
00											
01	1								CAPACITOR		0800007
02	1								SWAGE NUT		1700029

PURCHASING P.O. NO.	QTY	CYCLE	MANUFACTURE ACT	EST	ACT STD	HRS	MFG

PLATE/PAINT NO. | AREA

NOTES:

P/L 2635402

P.L. 2635402 REV ____ SHT 8 OF 11
DESCRIPTION TOP ASS'Y (2850)
NEXT ASSY END ITEM BY ~~Arma~~ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
03											
04	1								STRAIN RELIEF		1500077
05	2								~~PLUG, BUTCH ½"~~		~~9600081~~
06	1								PLUG, POWER		2000135
07	8.5 FT.								POWER CORD		1500394
08	1								* 6-32 × ½ PHP-MS		6806321-224
09	2								* 6-32 × ⅜ PHP-MS		6806323-824
10	4								*6 SPLIT LOCKWASHER		6606012
11	3								SOLDERLESS TERMINAL	(RING)	1500071
12	1								SOLDERLESS TERMINAL	(RECEPT.)	1500066
13	5"								WIRE, 14 AWG	COHU STK.	7700 614-999
14	2								*6-32 HEX NUT		6706322
15	1								SOLDERLESS TERMINAL	(RING)	1500056
16											
17											
18											
19											
20											
32	1								~~FUSE, 15A~~	~~(A8-F1)~~	~~1400037~~
33	1								PROBE	(R1)	2300031
34	1					A	2635833	B	CABLE ASS'Y.	(W3)	2635833-002
00											
00	REF					D	1635841	A	SCHEMATIC DIAGRAM	125V	
01	A/R								WIRE, 14 AWG (TEFLON)		1500330
02	A/R								WIRE, 18 AWG (TEFLON)		1500387
03											
04	4								SOLDERLESS TERMINAL	(SPADE)	1500054
05	2								SOLDERLESS TERMINAL	(SPADE)	1500055
06	3								SOLDERLESS TERMINAL	(RING)	1500062
07											
08											
35	1					B	1600004	D	COVER, BLOWER MTR.		1600004
36	6								WIRE NUT, SMALL	(E1-E4, E7, E8)	1500188

JOB QTY	AUL	QTY REC	FAB CD	PURCHASING PO NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 3 OF 11
DESCRIPTION TOP ASSY (6850)
NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S.O NO ____
QTY ____ FROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO	JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STO	EST HRS	ACT COM	COM	PLATE/PAINT IN	OUT	AREA
37	1								GROMMET		1500026														
38	1								PLUG (3/8 DIA HOLE)		3600082														
39	1								PLUG (1/2 DIA HOLE)		3600081														
40	1								PLUG (1 1/4 DIA HOLE)		1700142.														
41	1								ADAPTER BUSHING		4100003														
42	1								NUT		1500735														
43	2					A	1635610		SPACER		1635610														
44	2					B	1648658		SUPPORT BLOCK - INNER LINER		1648658-101														
45	2								SOLDERLESS TERMINAL	(RING)	1500062														
46																									
47																									
48	A/R								WIRE, 14 AWG (TEFLON)		1500380														
49	A/R								WIRE, 14 AWG	COHU STK.	7700614-999														
50	A/R								WIRE, 20 AWG	COHU STK.	7700620-999														
51	2								GROMMET, 1/2"		1500032														
52	6								CABLE TIE		1500014														
53	6								PUSH MOUNT		1500013														
54	1								OUTLET, CONVENIENCE	(J1)	1500083														
55	4								*4 x 1/2 PHP-SMS		6904120-400														
56																									
57																									
58																									
59	2								*6-32 x 3/8 PHP-MS		6806323-004														
60	17								*6-32 x 1/2 PHP-MS		6806321-204														
61	40								*6 x 1/2 PHP-SMS		6906126-400														
62	10								*6 x 1/2 FHP-SMS		6906120-100														
63	11								*8 x 1/2 THP-SMS		6908120-600														
64	8								*10-32 x 1/2 PHP-MS		6810321-204														
65	1								*8-32 x 1/2 THP-MS		6808321-206														
66	13								*6 LOCKWASHER		6606010														
67	6								*10 SPLIT LOCKWASHER		6610010														
68																									
69	4								*6 HEX NUT		6706320														

NOTES: ⚠ INDICATED ON SHT. 5 OF DWG.

P/L 2635402

PL 2635402 REV — SHT 10 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ASSEMBLED~~ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ FROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO	JOB QTY	QTY REQ	FAB QTY	PURCHASING P.O. NO	QTY DUE	MANUFACTURE ACT REC'D	EST HRS	ACT HRS	COMPLY	PLATE/PAINT IN	OUT	AVG $
70	1								* 10-32 × 3/4 PHP-MS		6810323-404												
71	4								* 10 FLATWASHER		6610000												
72	2								* 10-32 HEX NUT		6710320												
73	1					C	2618020		SHIP KIT ⚠		2618020-001												
00																							
01	1								HOSE		3600123												
02	1								STRAINER		1400110												
03	1								NUT		3600120												
04	1								SLEEVE		3600121												
05	1								CONNECTOR		3600004												
06	1								CONNECTOR		3600119												
07	1								WASHER		3600122												
74	1								STRAIN RELIEF		1500077												
75	1								PLUG, POWER PI 120V		2000135												
76	8-6								POWER CORD		1500394												
77	2								CAPACITOR C1, C2		2635048												
78	1					B	2600409		PLUG P2		2600409												
79	1								SOCKET J2		2000044												
80	1								TERMINAL BLOCK TB2		1400509												
81	1					A	1600012		NULL TERMINAL COVER		1600012												
82	1								CIRCUIT BREAKER CB1 120V	AM2-A3-A20-3	1400008												
83	1							⚠	CIRCUIT BREAKER CB1 240V	AM2-A3-A15-2	1400002												
84	1							⚠	PLUG, POWER PI 240V	HUBBLE #4570-C	2000224												
85	1					C	1647767		CASE, CIRCUIT BREAKER		1647767-101												
86	1					B	1643476		IDENTIFICATION PLATE		1643476-101												
87	5								SOLDERLESS TERMINAL (RING)		1500071												
88	2								SCREW #4 x 1/4 PHPSM		6904140-400												
89	4								SCREW #6 x 1/4 PHPSM		6906140-400												
90	2								SCREW #6-32 x 3/4 PHPMS		6806323-404												
91																							
92	1								SCREW #10-32 PHPMS		6810321-404												
93	3								LOCK WASHER (EXT) #10		6610031-000												
94	2								NUT #10		6710321-000												

NOTES: ⚠ TO BE SHIPPED WITH CHAMBER.

P/L 2635402

P/L 2635402 REV ____ SHT 11 OF 11

DESCRIPTION TOP ASSY (2350)

NEXT ASSY EVD ITEM BY BGM CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ SO NO ____
QTY ____ FROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY B QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
95	1					B	2618015	C	CO_2 ASSY SINGLE STEM	(PSI) ⚠1	2618015-005
00											
01	1					B	~~2618005~~		~~CO_2 VALVE WELDMT ASSY~~		~~2618005-002~~
02	1					B	1647840		INJECTOR ASSY CO_2 SINGLE STEM		1647840-009
00											
01	1								FITTINGS, INJECTOR		3600197
02	1					B	1647842		TUBE, CO_2 INJECTOR	TYPE 300 SS .062 I.D. 1/8 O.D.	1647842-115
03											
03	A/R								INSULATION	PRESSTITE TYPE S	2400046
04	1					B	1647407		CO_2 VALVE + BRACKET ASSY		1647407-002
00											
01											
02	1					B	1645008		BRACKET, CO_2		1645008-101
03	1								NIPPLE, BRASS - 1/8 NPT x 2.00		3601038
04	1								COUPLING, 1/8 NPT		3600102
05	4								#8-32 x 3/8 PHP-MS		6808323-804
06	4								#8 LOCKWASHER I.D.		6608010-000
07	4								#8 HEX NUT		6708320-000
08	1								SOLENOID VALVE (300 PSI)		1800105

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT CMC	MCH	PLATE/PAINT IN	OUT	PRESS

NOTES: ⚠1 CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

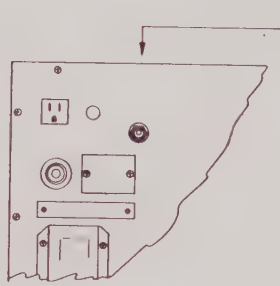
P/L 2635402

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER ECN M2027 F.I.D. 5980 CHGD VIEW OF ITEM 1 REMOVED TERM BRD COVER	5/4/80	

— INSTRUCTIONS FOR CHAMBER RETROFIT — TYPE V CONTROLLER

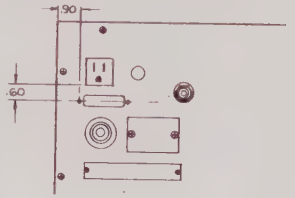
1. REMOVE CHAMBER RIGHT SIDE PANEL TO ALLOW ACCESS TO CONTROLLER & PROBE GUIDE TUBE. ON MODELS 2850, 5900 & 7650 TOP PANEL MUST BE REMOVED AS WELL.
2. REMOVE EXISTING CONTROLLER & ITS PROBE. DO NOT DESTROY BLACK PRESS-TITE.
3. NOTE CHAMBER REAR PANEL CONFIGURATION & DECIDE WHICH MEANS OF MOUNTING THE REMOTE INTERFACE CABLE ASSY. PLUG BEST SUITS YOUR CHAMBER & REQUIREMENTS →
4. MAKE THE REAR PANEL MODIFICATIONS
5. MOUNT THE REMOTE INTERFACE CABLE ASSY PLUG TO THE REAR PANEL— SEE DRAWING D1650223 & PARTS LIST FOR CABLE & HARDWARE CALLOUTS
6. INSERT THERMOCOUPLE ASSY IN PROBE GUIDE TUBE & SECURE IN PLACE USING BLACK PRESS-TITE — SEE DRAWING D1650223 — CAUTION — DO NOT SHORTEN THERMOCOUPLE ASSY WIRE FOR ANY REASON
7. INSTALL TYPE V CONTROLLER & WIRE PER WIRING DIAGRAM D1635840 OR D1635838 SHEET 2 OF 2. IF NECESSARY, COIL EXCESS THERMOCOUPLE WIRE & POSITION IT BETWEEN CONTROLLER & CHAMBER TO ACT AS A SERVICE LOOP IF NEEDED
8. REPLACE TOP PANEL IF YOU HAVE A MODEL 2850, 5900 OR 7650
9. BEFORE REPLACING SIDE PANEL SEE CONTROLLER MANUAL FOR SET UP & CALIBRATION PROCEDURES
10. CALIBRATE CONTROLLER
11. REPLACE SIDE PANEL

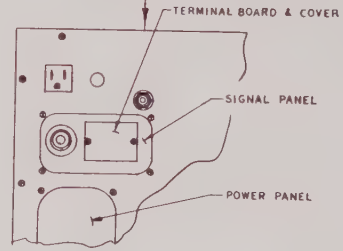
IF YOUR MODEL 2850 CHAMBER REAR PANEL LOOKS LIKE THIS, MODIFY BY:



1/2 SCALE

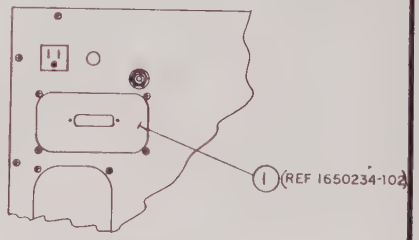
1. ADD CUTOUT AT DIMENSION SHOWN



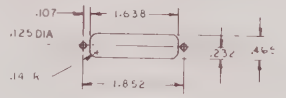


1/2 SCALE

1. REMOVE OLD SIGNAL PANEL & REPLACE WITH NEW ITEM 1.



REMOTE INTERFACE CABLE ASSY PLUG CUTOUT DIMENSIONS



⚠ FINISH (IF APPLICABLE)

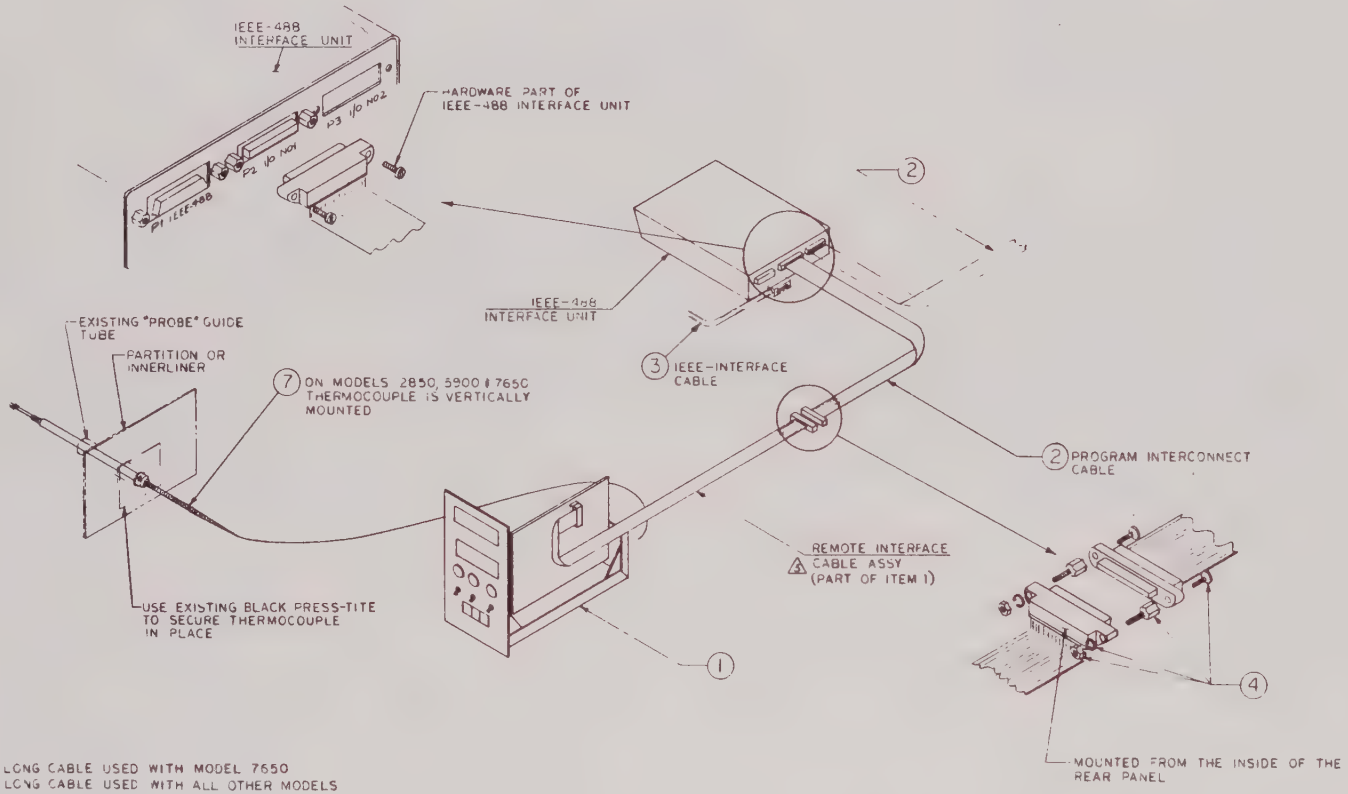
⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

								ENGINEERING ACTIVITY	DELTA DESIGN INC.
								M1945	SAN DIEGO, CA. 92138
								DESIGN	TITLE: CHAMBER, TYPE V CONTROLLER RETROFIT 2850
								DRAFTED JKEJNIK 12-17-79	
								CHECKED	
								APPROV	SIZE D — CODE IDENT — 1650239
								RELEASE	
								DO NOT SCALE DWG	SCALE — SHEET 1 OF 1
DASH QTY	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWG REV	MATERIAL ⚠			
1	2635402	X856							
APPLICATION			EFFECTIVITY			FINISH ⚠			

BLUE CARD

REVISIONS			
ZONE	DESCRIPTION	DATE	APPD



4 36" LONG CABLE USED WITH MODEL 7650
28" LONG CABLE USED WITH ALL OTHER MODELS

4 FINISH (IF APPLICABLE)

4 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

QUANTITY	NEXT ASSY	USED ON
	2035-77	H145
-	2020542	5-XXX
-	2035661	5XX
-	2036-81	5XX
-	2635412	5XX
-	2035 ?	5XX

SERIAL NO.	DATE FIT	DWG REV
EFFECTIVITY		

MATERIAL 4

FINISH 4

ENGINEERING ACTIVITY	
91 35	
DESIGN	
DRAFTED	DLF, WIE 1-91
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.

TITLE: INTERCONNECT ASSY.
TYPE 'X' CONTROLLER WITH
IEEE-488

SIZE	CODE IDENT	
D		1650223

SCALE

SHEET ___ OF 1

PL 1650230 REV ____ SHT 1 OF 1
DESCRIPTION THERMOCOUPLE ASSY
NEXT ASSY MAIN BY E.J.G. CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN ____ MACH ____

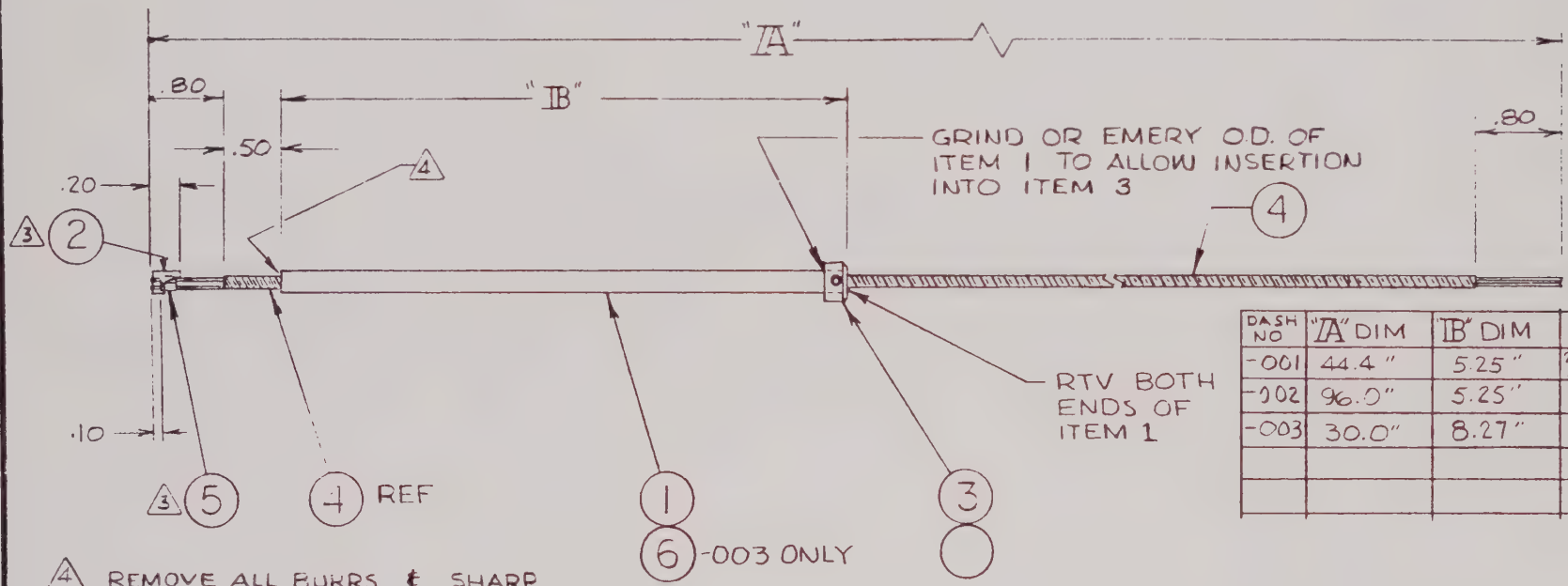
ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
00	X					B	650230		THERMOCOUPLE ASSY.		1650230-001
00		X				B	1650230		THERMOCOUPLE ASSY		1650230-002
00			X			B	1650230		THERMOCOUPLE ASSY		1650230-003
00											
00											
00											
00											
01	1	1				B	1650230		TUBE, ALUMINUM 3/16 O.D. X .022 WALL X 5 1/4 LONG		1650230-101
02	1	1	1			B	1650230		TUBE, ALUMINUM 3/16 O.D. X .022 WALL X .20 LONG		1650230-102
03	1	1	1						COLLAR, SET SCREW	BERG # CS5	1700292
04	4'								WIRE, THERMOCOUPLE	IRON CONSTANTAN	1501375
		8'							" "	" "	1501375
			30"						" "	" "	1501375
05	1	1	1						QUIKTIP	# 128543	1700327
06			1				B1650230		TUBE, ALUMINUM 3/16 O.D. X .022 WALL X 8.27" LONG		1650230-103

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING PO NO	QTY	DUE	REC	MANUFACTURE ACT STD	EST HRS	ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 1650230

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER ECN M2[illegible]		



DASH NO	"A" DIM	"B" DIM	USED ON
-001	44.4"	5.25"	2300 THRU 7650, 2850A
-002	96.0"	5.25"	8000
-003	30.0"	8.27"	2300A

4 REMOVE ALL BURRS & SHARP EDGES FROM I.D. OF ITEM 1 (BOTH ENDS)

3 INSURE ITEM 5 IS SOLIDLY CRIMPED OVER ITEM 4 — THEN ITEM 2 IS CRIMPED OVER ITEM 5

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
003	1	MULTI-USAGE	
002	1	1650223	8000
001	1	1650223	

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES ± 30'
MOLY TOLERANCES

MATERIAL ⚠

FINISH ⚠

ENGINEERING ACTIVITY M1952

DESIGN	
DRAFTED	OLEJNIK 12/6/72
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONRAC INC.
SAN DIEGO, CA. 92123

TITLE: THERMOCOUPLE ASSY.

SIZE B | CODE IDENT | 1650230

SCALE | SHEET 1 OF 1

PL 1650223 REV ___ SHT 1 OF 1

DESCRIPTION INTERCONNECT ASSY TYPE V CONTROLLER WITH IEEE-488

NEXT ASSY MULTI-USAGE BY F.J.O. CK'D ___ APPD ___

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ___ S.O NO ___
QTY ___ PROM DATE ___ ACT ___
RUN * ___ MACH ___

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.	JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC'D	MANUFACTURE ACT STD HRS	EST ACT COM	ACT COM	PLATE/PAINT IN	OUT	AREA
00	X					D	1650223		INTERCONNECT ASSY- TYPE V CONTROLLER WITH IEEE-488		1650223-001														
00																									
00																									
00																									
00																									
00																									
00																									
01	REF					D	1650160		TYPE V CONTROLLER		1650160-001														
02	1								PROGRAM INTERCONNECT CABLE																
03	1								IEEE-488 INTERFACE CABLE																
04	1								JACK SOCKET ASSY.	ANSLEY #609-003	1700324														
05																									
06																									
07	1					B	1650230		THERMOCOUPLE ASSY	MULTI-USAGE	1650230-001														

NOTES:

1650223
P/L

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